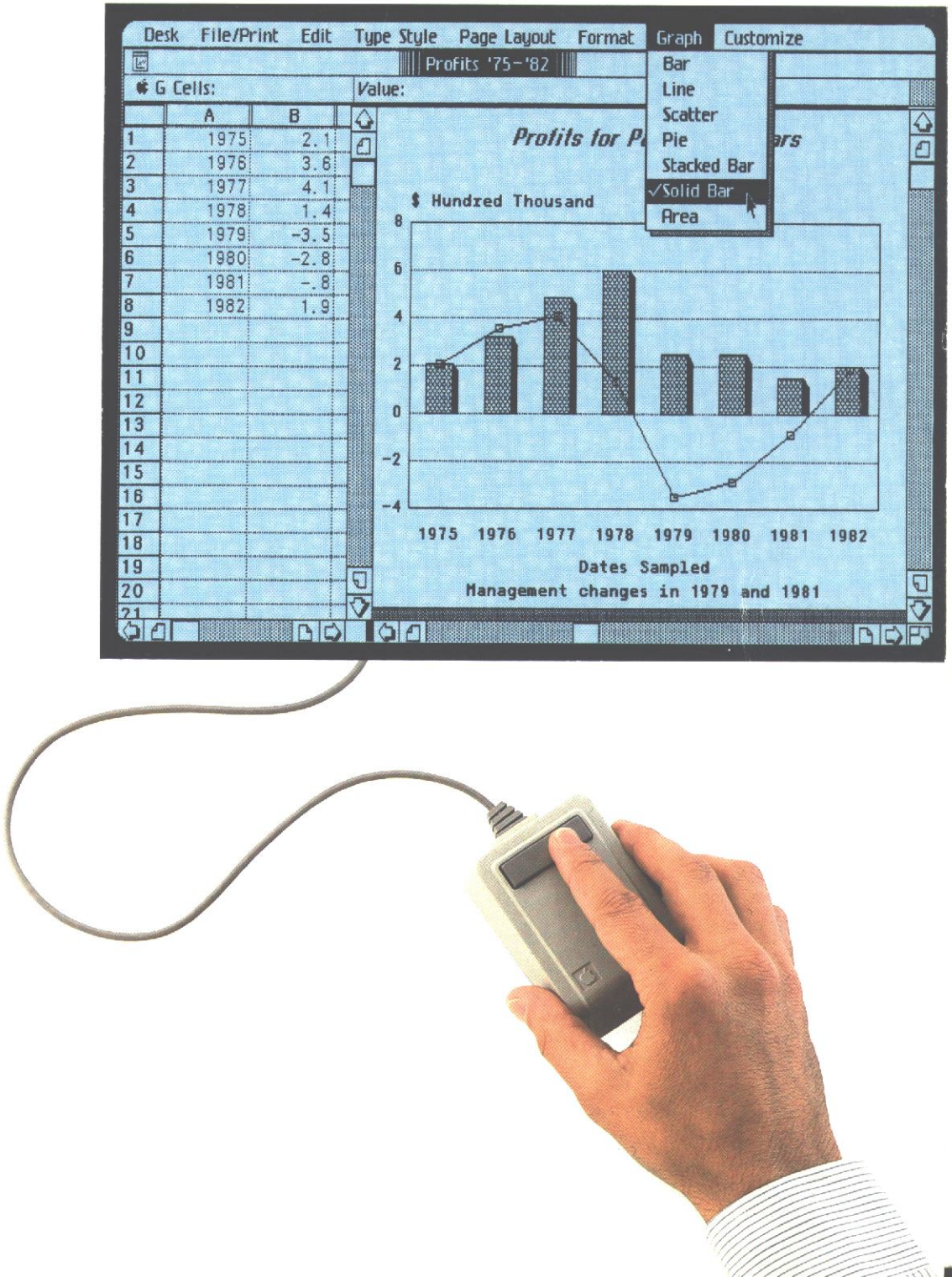
LisaGraph


Desk
File/Print
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Type Style
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Graph
Customize
Profits '75-'82
G Cells:
Value:
Bar
Line
Scatter
Pie
Stacked Bar
✓Solid Bar
Area
$ Hundred Thousand
8
6
4
2
0
-2
-4
1975 1976 1977 1978 1979 1980 1981 1982
Dates Sampled
Management changes in 1979 and 1981

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Introducing LisaGraph

LisaGraph is a personal graphics tool that can help you compare and communicate important information quickly and effectively.

You don't have to be an artist to prepare professional-looking graphs and charts. By supplying information and selecting options, you can quickly and easily transform numbers and words into a variety of graphs and charts. You can also use information you have already prepared (such as information from LisaCalc tables).

A graph is a single-page drawing that displays the relationship between sets of numbers (such as profits for particular years). You can compare up to eight sets of information (such as sales regions or different products) over time. With LisaGraph you can create bar graphs, line charts, scattergrams, pie charts, stacked or solid bar graphs, and area charts.

To help you communicate information effectively, LisaGraph allows you to change the type of graph or how the graph is displayed (such as combining charts, displaying grid lines, hiding data points, and changing the size of the graph or type styles). You can also display a prediction (regression) line, add comments to the graph, or change the range of labels displayed on the graph.

Using LisaGraph makes your job easy and saves time. You simply enter the sets of numbers in a table and LisaGraph automatically calculates the ranges, pairs the numbers, plots the intersection of the points, and displays your graph. You can then revise the content or the appearance of the graph before printing it or using the information in other graphs.

About This Manual

This manual contains three chapters:

- Chapter 1, Learning LisaGraph, gives you practice using LisaGraph by taking you step by step through an easy example.
- Chapter 2, Using LisaGraph, contains detailed instructions for performing specific tasks on LisaGraph and offers suggestions that help you use LisaGraph efficiently and effectively.
- Chapter 3, LisaGraph Reference, gives details on how each of LisaGraph's features works.

Each chapter begins with its own table of contents so you can easily look up different topics. If you can't find what you need in the table of contents, check the Index at the end of the manual. The Index lists many topics in several ways to help you find the topic you're looking for even if you're not sure what it's called.

The information in this manual assumes you've gone through LisaGuide, which teaches you how to use the mouse and explains special terms, such as *selecting* and *choosing,* that are unique to the Lisa. For instructions on starting LisaGuide, refer to the *Lisa Office System* manual.

Chapter 1

Learning LisaGraph

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11 Have You Gone through LisaGuide?
11 What You Need to Get Started

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Getting Started with LisaGraph

This chapter gives you actual practice with LisaGraph. By going step by step through an easy example, you will quickly become familiar with the basic skills for using LisaGraph to create, revise, save, and print your own documents.

If you've already used another Lisa® tool, you'll see many similarities in LisaGraph; the basic concepts for using each Lisa tool are the same.

Have You Gone through LisaGuide?

The Lisa Office System comes with a micro diskette called LisaGuide, which provides a self-paced tutorial on use of the Lisa desktop and the mouse. Before beginning the practice exercises given here, be sure you've gone through LisaGuide.

You should now feel comfortable with the special terms used in reference to the Lisa. For example, do you fully understand the special processes called *selecting* and *choosing?* If not, now is a good time to review LisaGuide once more. Refer to Chapter 1, LisaGuide, in the *Lisa Office System* manual for instructions on starting the LisaGuide micro diskette.

What You Need to Get Started

To do the practice exercises in this chapter, you'll need

- A Lisa set up and plugged in, with the keyboard and mouse attached. Make sure the Lisa is turned on.
- A printer set up and plugged in if you want to print your practice graphs. Make sure your printer is hooked up to the Lisa and turned on. Printing is optional.
- About 30 minutes.

If your system is not already set up, refer to Appendix A, Setup Procedures, in the *Lisa 2 Owner's Guide.*

Seeing What's on a Disk

To get at the document you'll work with, you first need to open the Disk icon, as described in the steps below.

The way you open the Disk icon illustrates your Lisa's most general principle:

- First you select something.
- Then you do something to what you've selected.

To Open the Disk Icon:

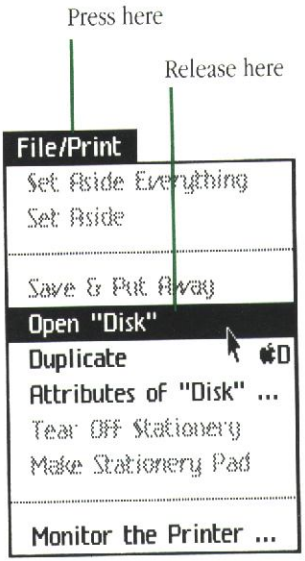
1 ▸ Select (highlight) the Disk icon by moving the pointer to the icon and clicking the mouse button. (Icon not highlighted? Try again.)

2 ▸ Open the selected Disk icon by opening the **File/Print** menu and choosing **Open "Disk"**.

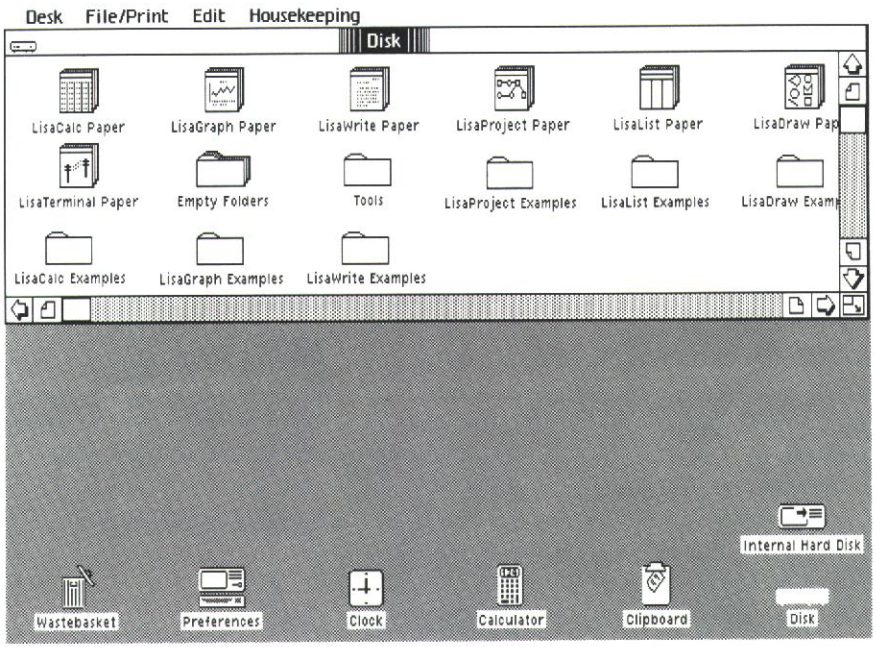
Here's how

a. Press and hold down the mouse button, with the pointer's tip on **File/Print** in the menu bar.

b. Move the pointer down and release when **Open "Disk"** highlights. (Is the **Open "Disk"** menu item dim? You probably clicked somewhere else on the gray part of the screen and deselected the Disk icon. Go back to step one and make sure the icon is selected.)



3 ▸ Notice the window to the disk that zooms open on your Lisa's desktop. Your disk is like a very large file drawer; it's where you'll keep most of your work.



Pulling a Document

Inside the disk window you should see several stationery pads and folders. The LisaGraph Examples folder contains the example you'll be working with here.

In the steps below, you will

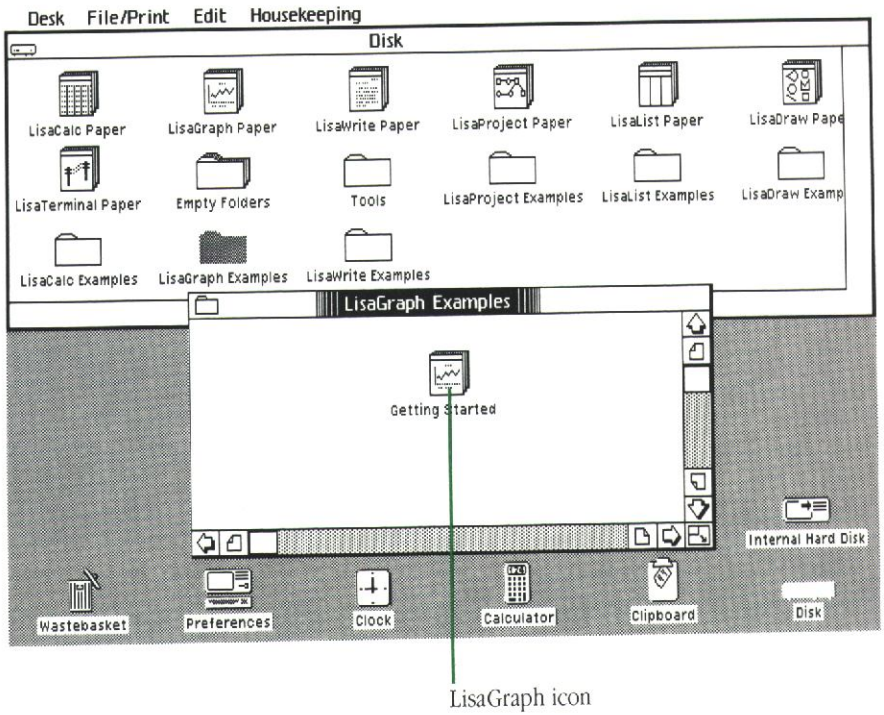
- Open the LisaGraph Examples folder.
- Tear off a sheet from the Getting Started stationery pad that's inside the folder.
- Move the new sheet to a clear spot in the folder.
- Name and open the document.

To Open the LisaGraph Examples Folder:

1 ▶ Select the LisaGraph Examples folder by clicking on it.

2 ▶ Open the **File/Print** menu and Choose **Open "LisaGraph Examples"**.

Notice the window to the LisaGraph Examples folder that zooms open, and its contents, as shown. The graph-like pattern on the icon in the folder shows it's a LisaGraph icon.

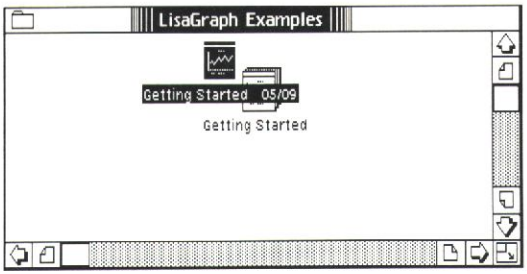


Copies of the Getting Started example are on the Getting Started stationery pad.

To Tear a Sheet from the Pad:

1 ▸ Select the Getting Started pad icon.

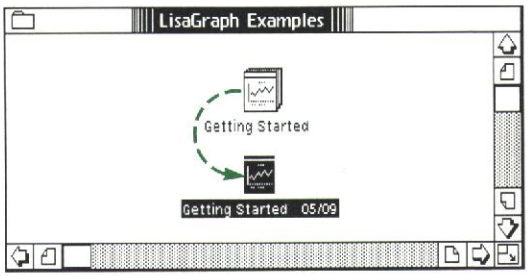
2 ▸ Open the **File/Print** menu and choose **Tear Off Stationery**. Wait a moment until the new document appears, as shown.



To Move the New Icon Out of the Way:

1 ▸ Move the pointer to the icon.

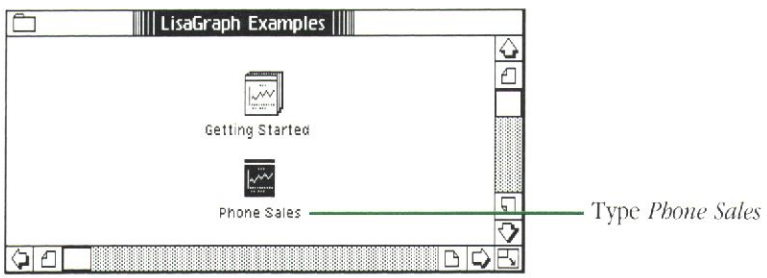
2 ▸ Press and hold down the mouse button and drag the icon as shown; then release the mouse button.



To Rename the New Document:

1 ▸ Make sure the untitled document icon is still selected (highlighted). If you've deselected the icon by clicking elsewhere on the screen, select the icon again by clicking on it.

2 ▸ Type the name *Phone Sales* (Typing mistake? Use the Backspace key to correct it.)

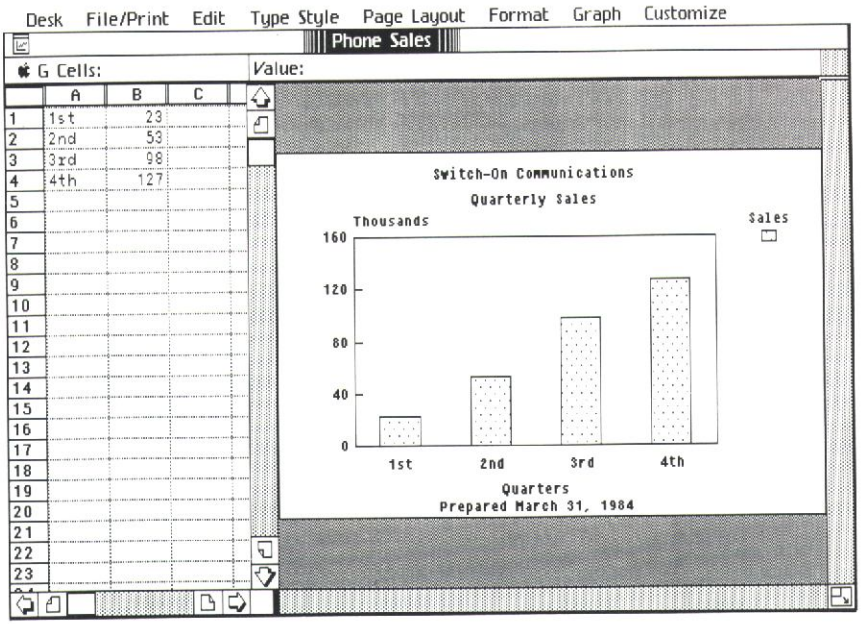


To Open the Phone Sales Document:

1 ▸ Make sure the document icon is selected (highlighted).

2 ▸ Open the **File/Print** menu and choose **Open "Phone Sales"**.

Notice how the icon zooms open into a window. Wait a minute — the hourglass, ⧗, means wait — until LisaGraph displays Phone Sales.



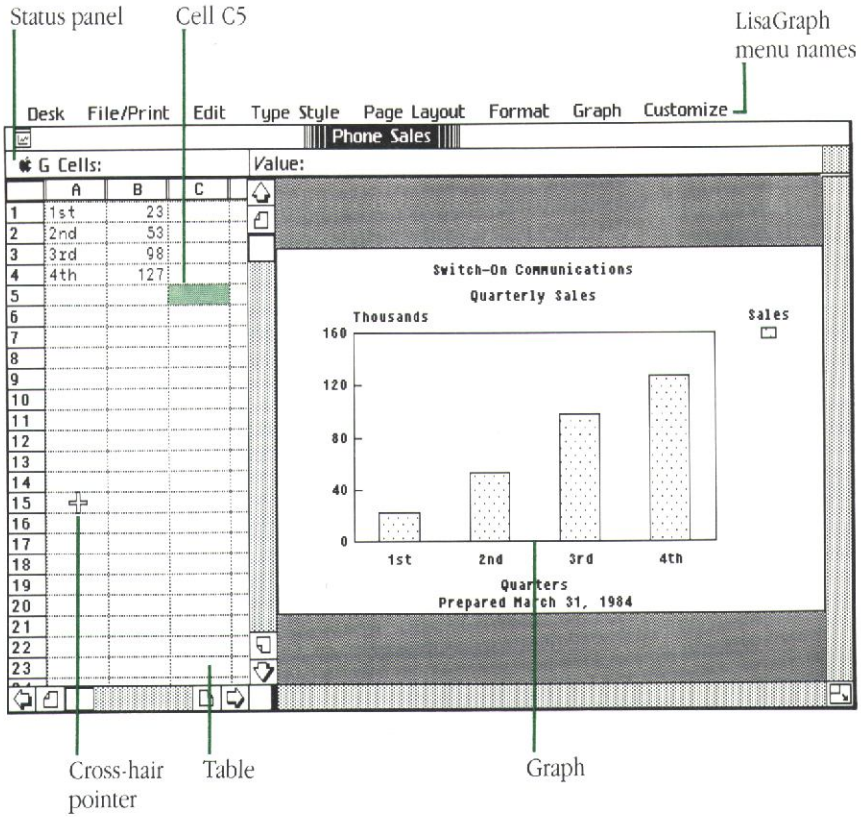
The LisaGraph Document

The Phone Sales document is now open on your Lisa's desktop.

The *menu bar* at the top of the screen shows the names of the *menus* used in working with LisaGraph. Each menu contains a list of actions you can take with a LisaGraph document.

On the left side of the Phone Sales document is a *table;* on the right side is a *graph.* The table is made up of *lettered columns* and *numbered rows* that intersect to form the *cells* into which you enter information. For example, cell C5 is in column C, row 5. Figures entered into the cells of the table are plotted on the graph.

The *Status panel,* above the table and graph, contains areas labeled Cells and Value. These display a selected cell's coordinates (column and row location) and value.



Without pressing the mouse button, move the pointer around the screen and notice how the shape of the pointer changes to an arrow pointer, ↖, when it's over the menu bar, to a cross-hair pointer, ✛, when it's over the table, and to a text pointer, I, when it's over text in the graph.

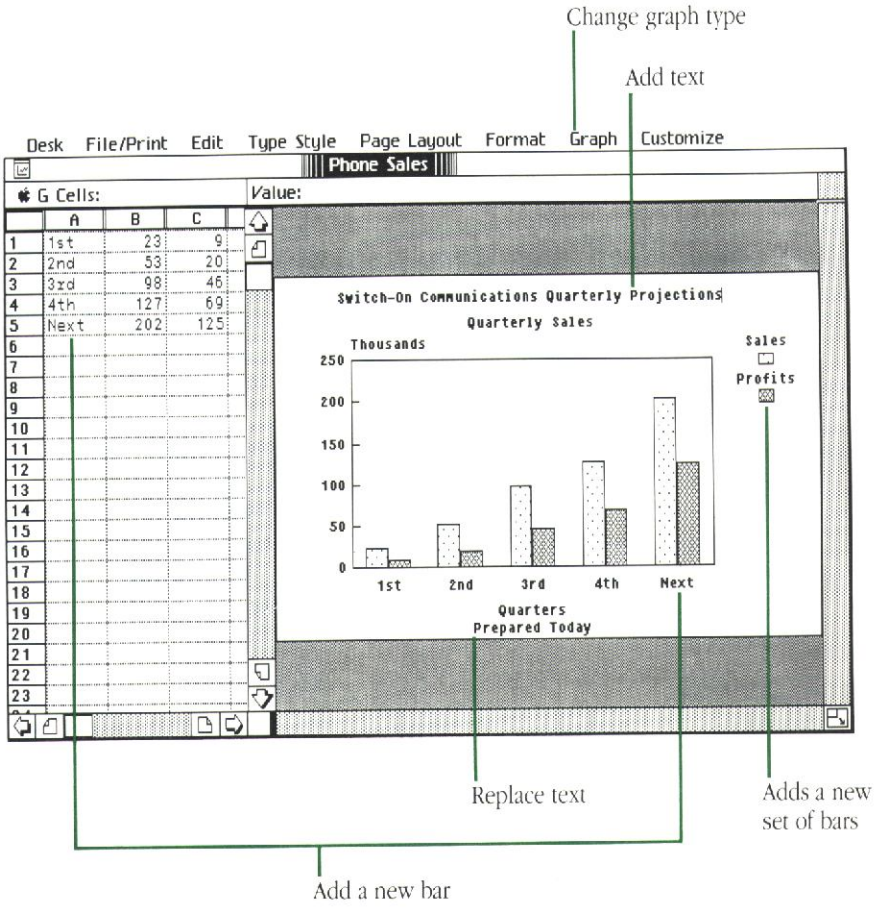
Practice with LisaGraph

Imagine you work for a fictional company called Switch-On Communications, Inc. You want to plot next quarter's sales and profit goals on a graph with the sales and profit figures from the last four quarters. To do this, you must update and edit your current Phone Sales graph.

In the next several pages you will learn to

- Examine the current data plotted as a line graph, scattergram, and pie chart, and then again as a bar graph.
- Add next quarter's sales projection as a new bar on the graph.
- Add the profit information for each quarter as a new set of bars on the graph.
- Add text to the graph to update the graph's title.
- Replace text on the graph to change the graph's legend label and preparation date.

When you've finished, your graph will look like the one shown below. Compare it with the graph now on your screen.



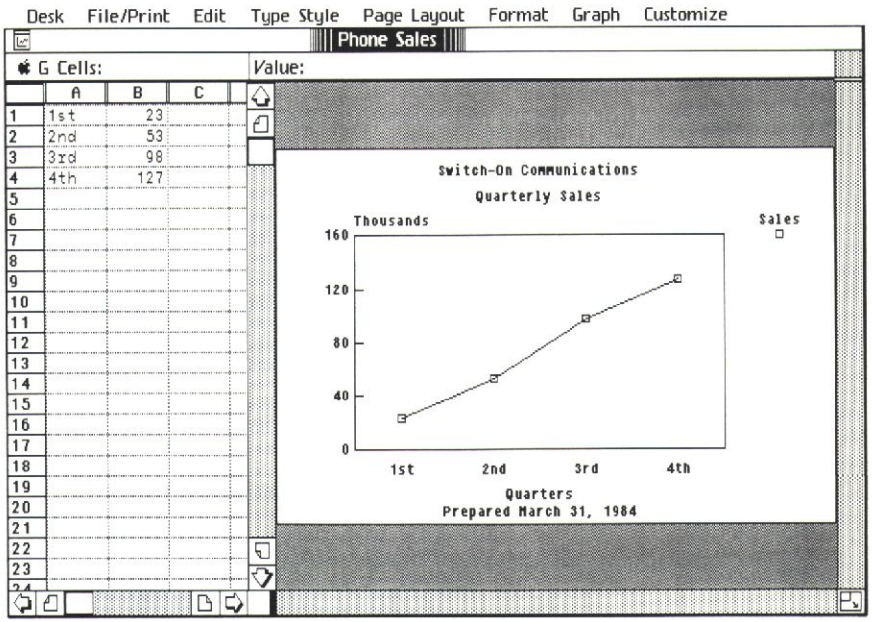
Changing the Graph Type

Follow the steps below to examine the current data plotted as

- A line graph.
- A scattergram.
- A pie chart.
- And then again as a bar graph.

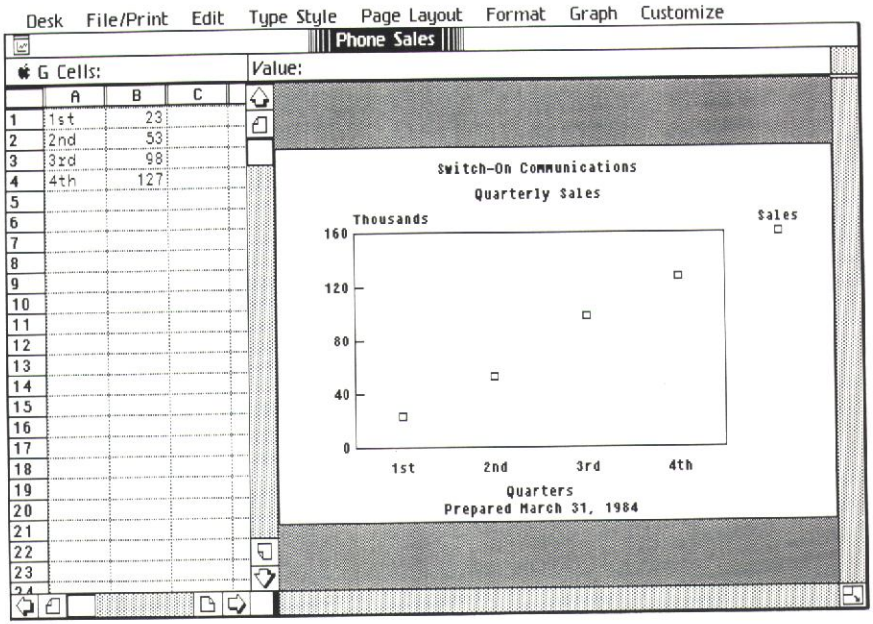
To Change the Type of Graph:

1 ▸ Open the **Graph** menu and choose **Line**.

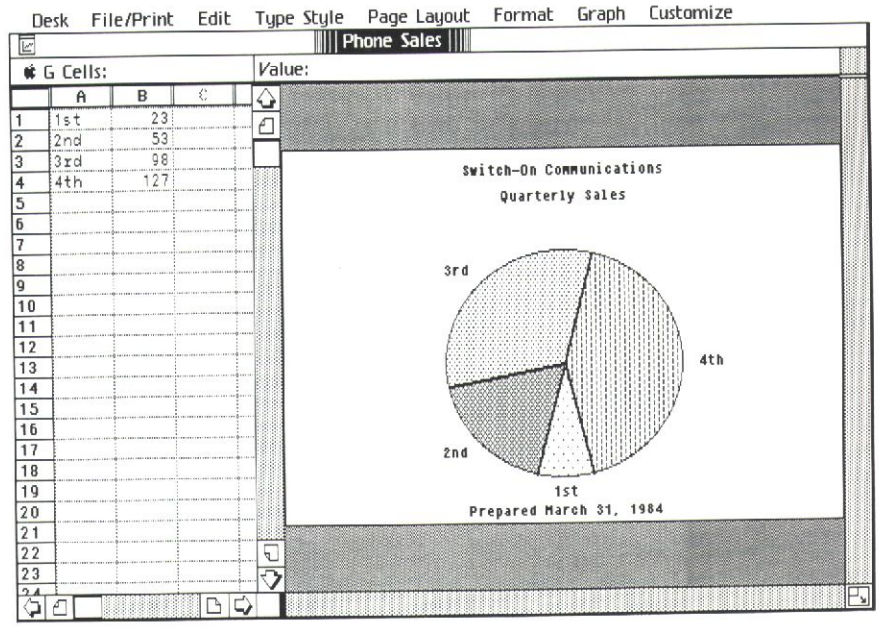


▶▶▶

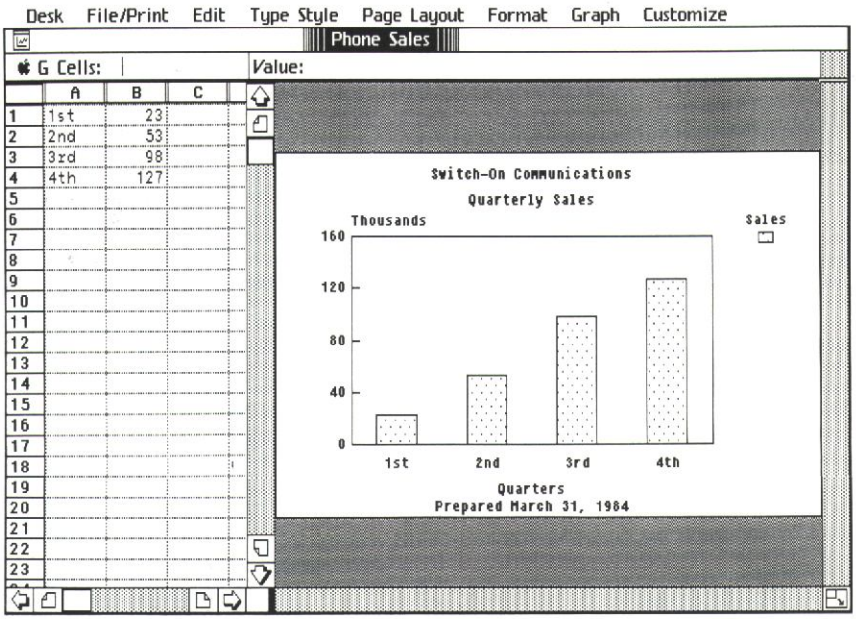
2 ▸ Open the **Graph** menu and choose **Scatter**.



3 ▸ Open the **Graph** menu and choose **Pie**.



4 ▸ Open the **Graph** menu and choose **Bar**.



Adding a New Bar to the Graph

You need to add next quarter's projected sales figure ($202,000) as a new bar on the graph.

Follow the steps below to

- Add a new X-axis label to the graph.
- Add the projected sales figure to the graph.

To Add the New X-Axis Label to the Graph:

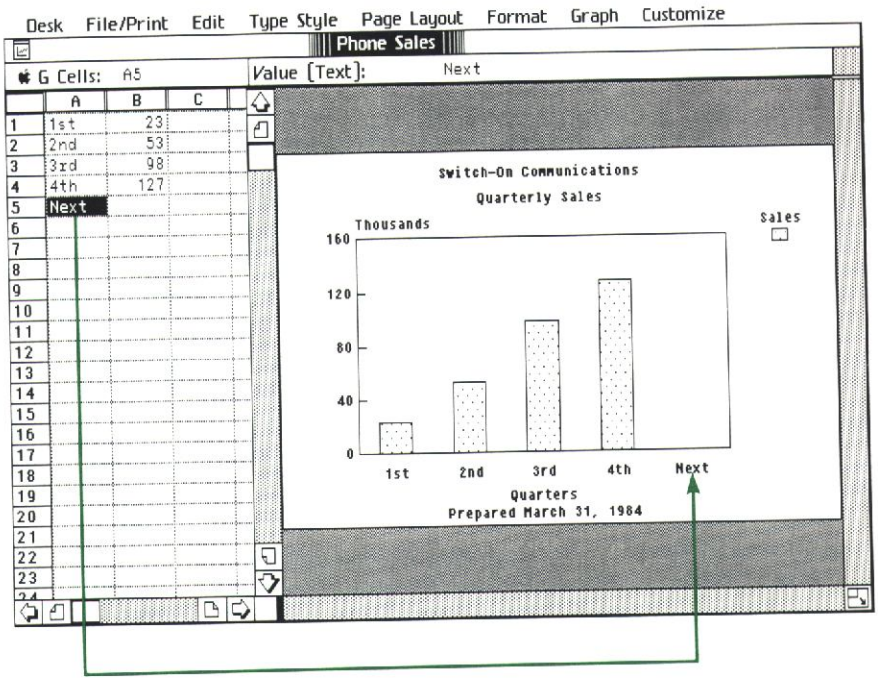
1 ▸ Select cell A5 by placing the pointer in the cell and clicking the mouse button once. (Select the wrong cell? Move the pointer to the cell you want and click the mouse button.)

	A	B	C
1	1st	23	
2	2nd	53	
3	3rd	98	
4	4th	127	
5			
6			
7			

▶▶▶

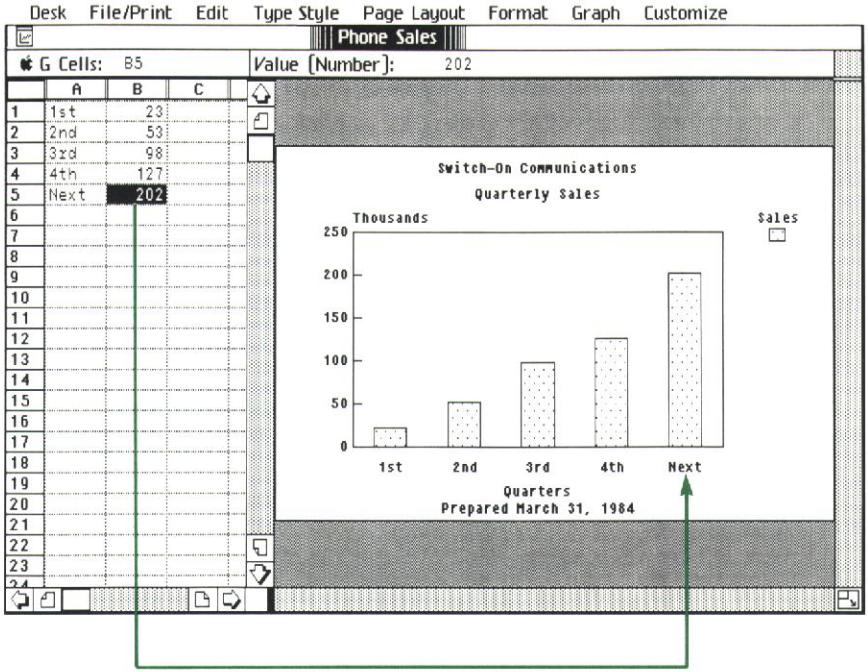
2 ▸ Type the word *Next* and press the Enter key. (Make a mistake? Use the Backspace key or open the **Edit** menu and choose **Clear Entries**.)

Notice the new label on the X axis of the graph and the space made for a new bar of information.



To Add the Projected Sales Figure to the Graph:

1 ▶ Select cell B5, type 202, and press the Enter key.



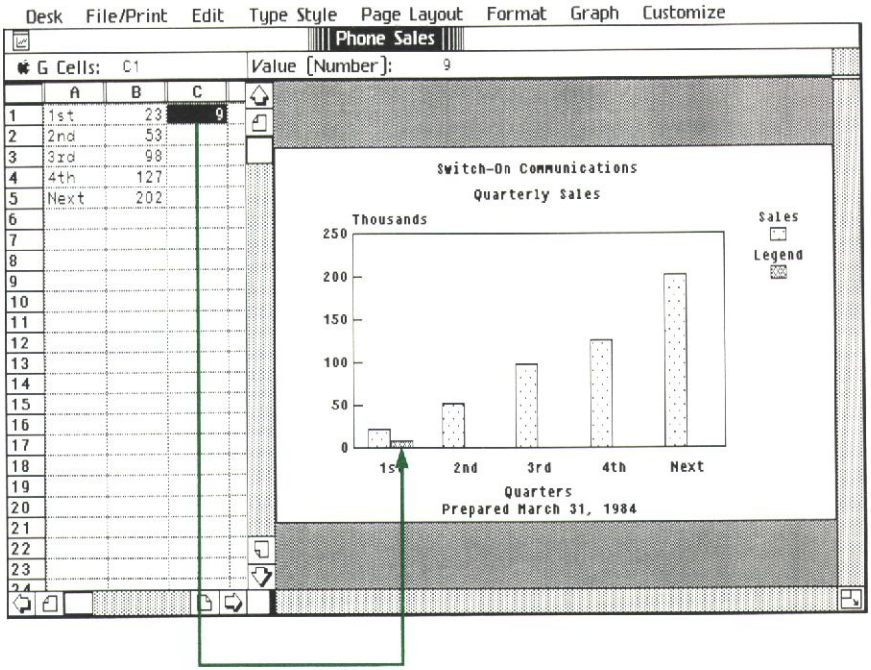
Adding a New Set of Bars to the Graph

To Add a New Set of Bars to the Graph:

Follow the steps below to add the profit information for each quarter as a new set of bars on the graph.

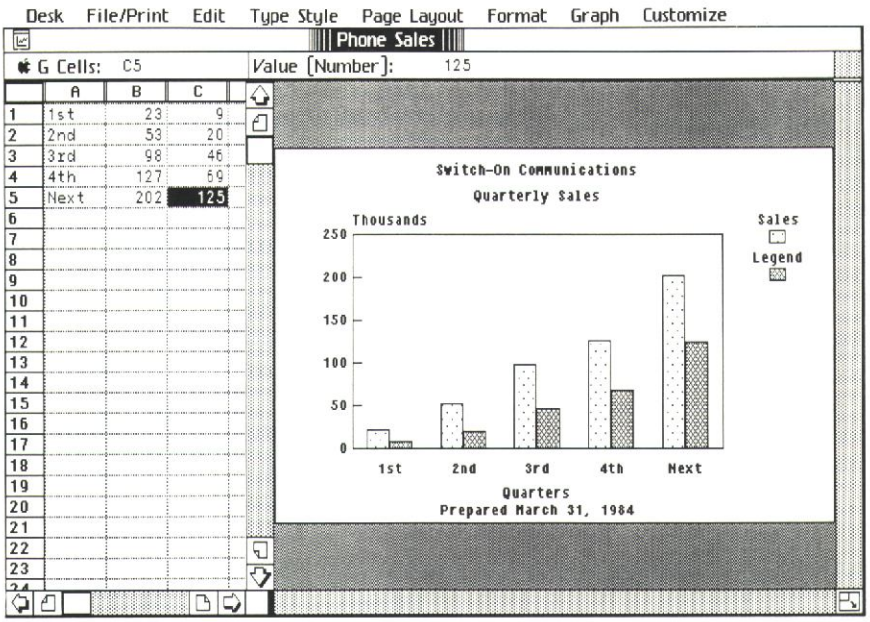
1 ▶ Enter the number 9 into cell C1. (Select the cell, type 9, and press the Enter key.)

Notice the second bar that is automatically graphed next to the Sales bar for the first quarter.



2 ▸ Follow the same procedure to graph the remaining profit information. (Make a mistake? Use the Backspace key or open the **Edit** menu and choose **Clear Entries**.)

Quarter	Profits
"2nd"	*20*
"3rd"	*46*
"4th"	*69*
"Next"	*125*



Adding Text to the Graph

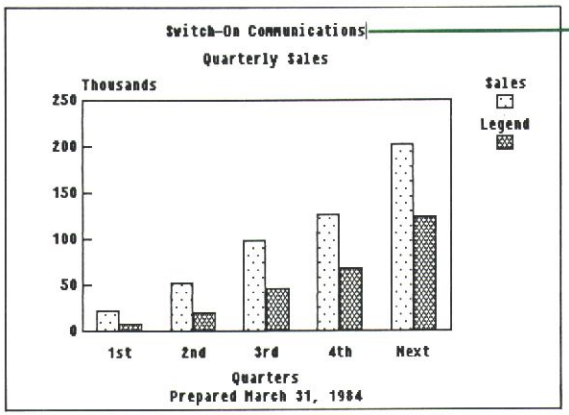
You can add text anywhere on the graph.

Follow the steps below to add to the current graph title so that it reads:

Switch-On Communications Quarterly Projection
Quarterly Sales and Profits

To Add Text to the Graph:

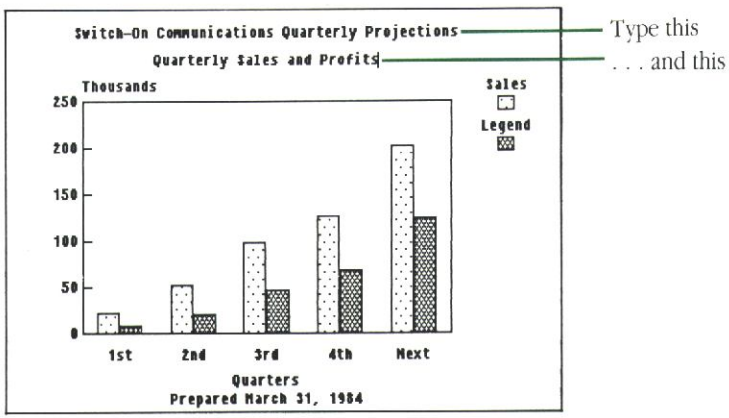
1▶ Use the text pointer, , to select an insertion point, a blinking vertical line, after the word *Communications* by clicking once just after the *s,* as shown.



2▶ Press the space bar and type the words *Quarterly Projection.* (Typing mistake? Use the Backspace key to correct it.)

Note: You don't have to press the Enter key when you add text to the paragraph.

3▶ Follow the same procedure to make *Quarterly Sales* read *Quarterly Sales and Profits,* as shown.



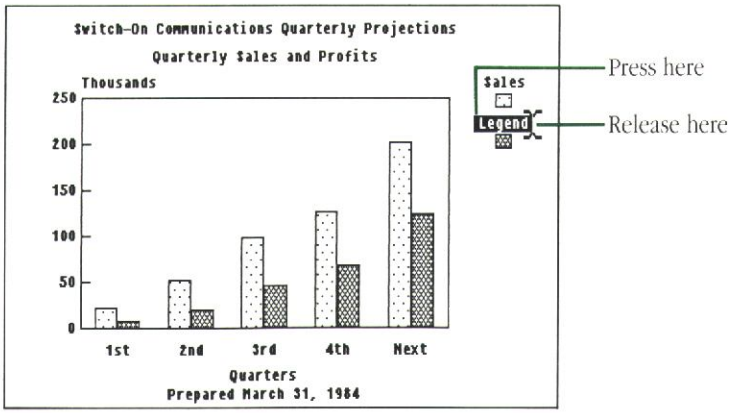
Replacing Text on the Graph

Two more items on the graph need changing: the legend, which describes what the bars stand for, and the preparation date.

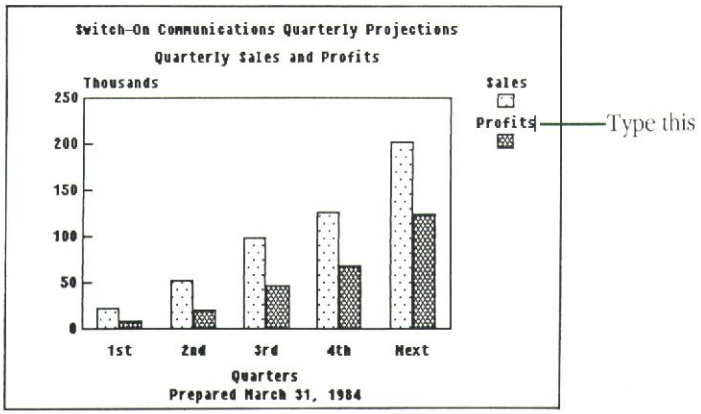
Replace the word *Legend* with the word *Profits,* and *March 31, 1983,* with *today's date,* as described in the steps below.

To Replace Text on the Graph:

1 ▸ Select (highlight) the word *Legend* by pressing and holding down the mouse button before the *L* and then moving the pointer across and releasing after the *d,* as shown (press and drag). (Didn't get it? Just try again. Move the pointer to a place right before the L and make sure it changes to a text pointer, I, before you press the mouse button.)

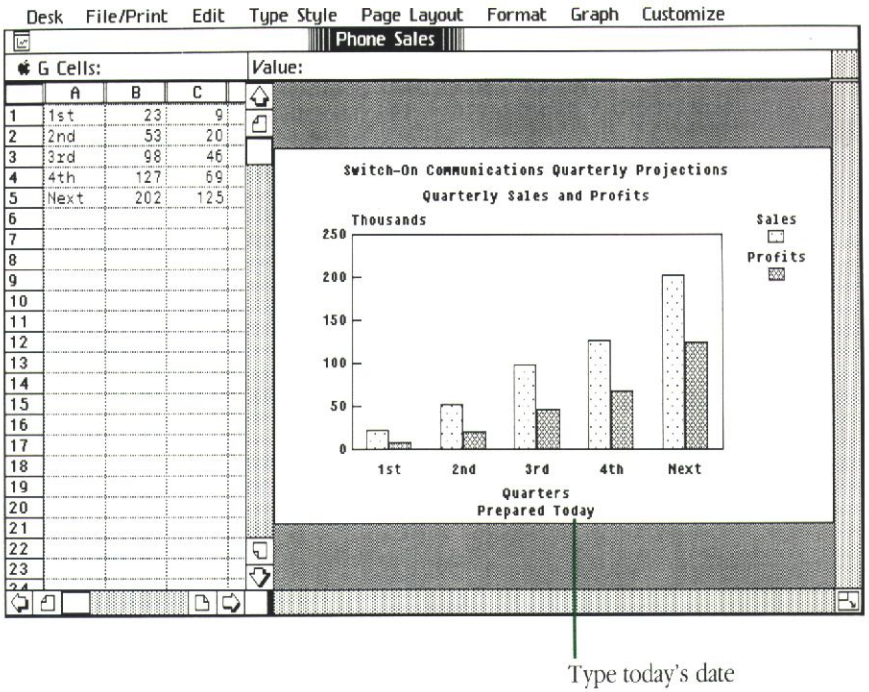


2 ▸ Type *Profits.* (Typing mistake? Use the Backspace key to correct it.)



▸▸▸

3 ▸ Follow the same procedure to replace *March 31, 1984,* with *today's date.*



Your graph is now complete. To see it without the blinking insertion point after today's date, click in the deselect box.

Printing Your Document (Optional)

You can now print the LisaGraph document you've been working on if you want to. For guidelines on printing, refer to Printing Your Document, in Chapter 3, Lisa Essentials, in the *Lisa Office System* manual.

If you don't want to print your graph now, or if you don't have a printer, go on to the next section, Putting Your Document Away.

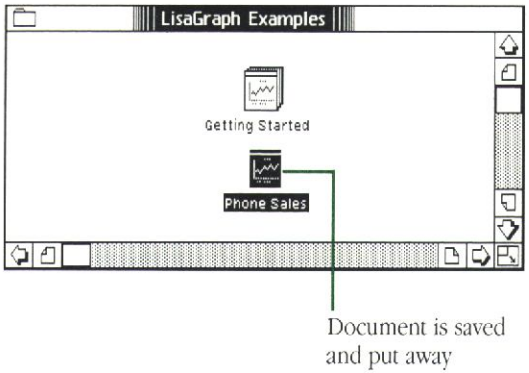
Putting Your Document Away

To Put Your Document Away:

Now that you've finished working on your LisaGraph document, follow the steps below to put it away.

1 ▶ Open the **File/Print** menu and choose **Save & Put Away**. (Is the **Save & Put Away** menu item dim? Click somewhere in the document to activate its window.)

Notice how the window zooms down to a document icon back in its filing home in the LisaGraph Examples folder.

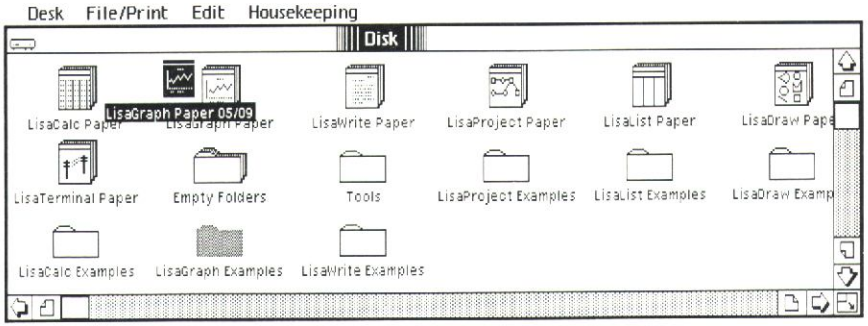


Starting from Scratch

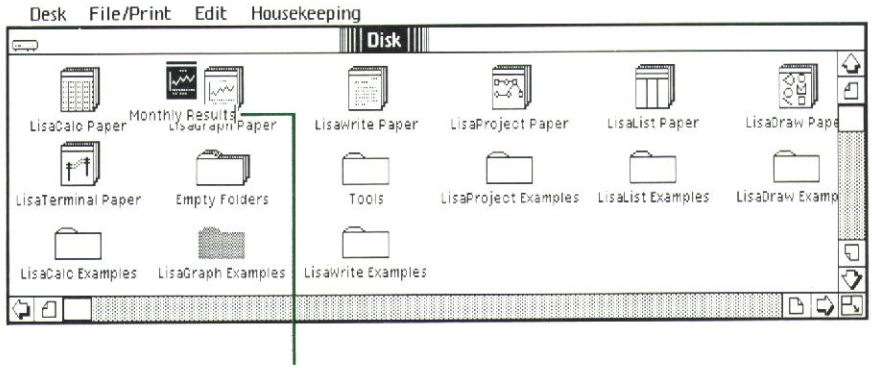
To Start a New LisaGraph from Scratch:

To start a new graph, you need to get a piece of LisaGraph stationery, as described below. Blank LisaGraph stationery is in a pad called LisaGraph Paper, in the disk window.

1 ▶ Tear off a sheet from the LisaGraph Paper pad at the top of the disk window. (Select the pad icon; open the **File/Print** menu and choose **Tear Off Stationery**.)

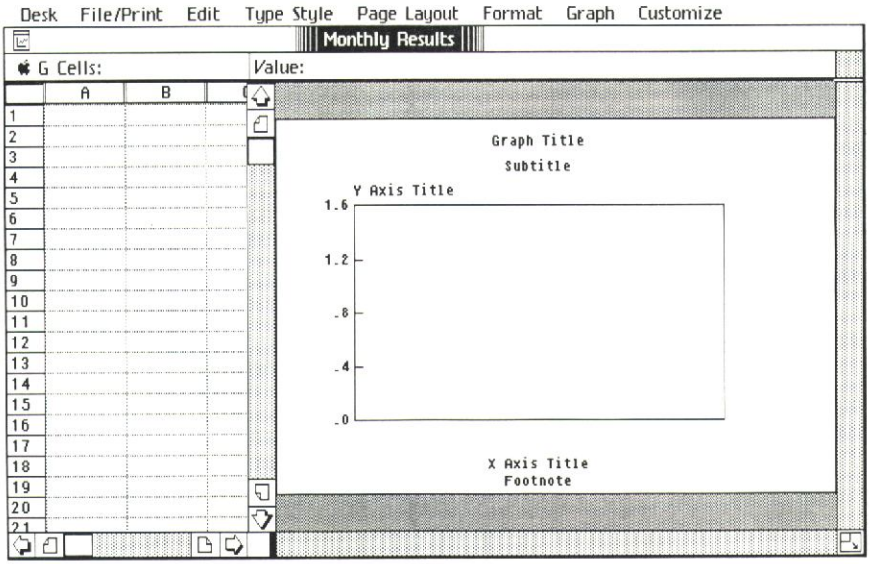


2 ▶ Don't worry right now about moving the untitled document out of the way. Change the name of the untitled document to *Monthly Results*. (Make sure the icon is selected; then type.)



Type *Monthly Results*

3▶ Open the piece of LisaGraph paper you named *Monthly Results* as you would any document. (Open the **File/Print** menu and choose **Open "Monthly Results"**.)



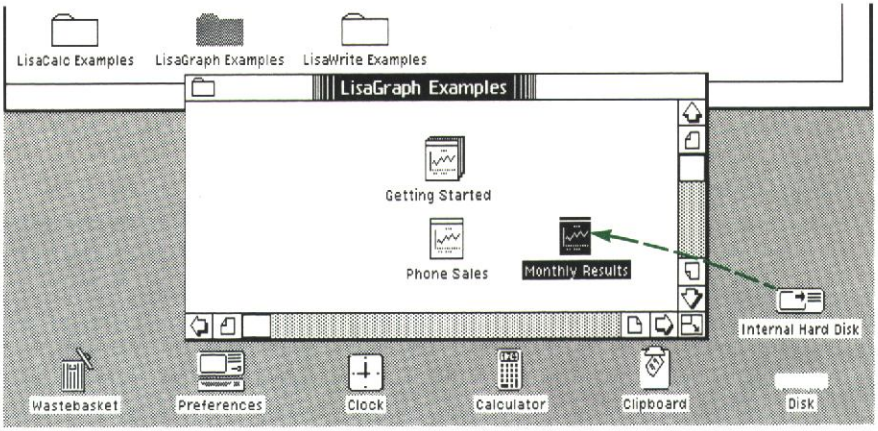
4▶ If you want to make your own graph, do so. Experiment — try different things. Press the mouse button, move across the menu bar, and look at what's in the various menus.

If you want specific information on a menu item, refer to Chapter 3, LisaGraph Reference, or check the Index.

Finishing Up

It's a good idea to save all your documents and clear off your Lisa's desktop at least once a day. The steps below illustrate one of the many ways you can manage things on the desktop.

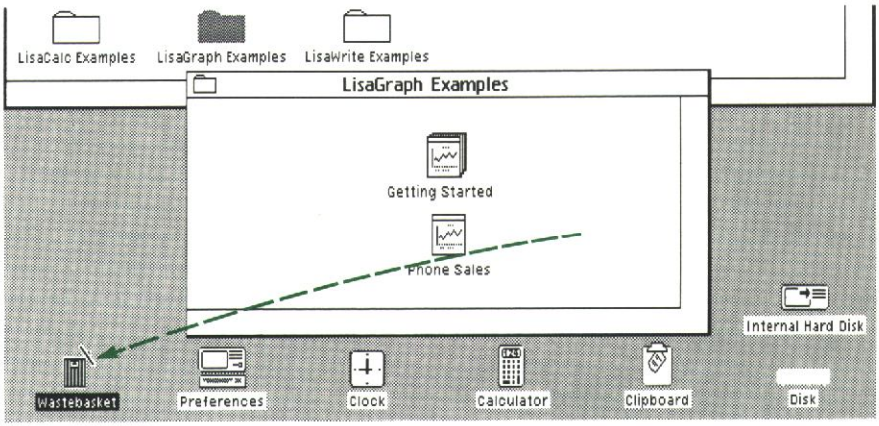
Note: When you are connecting, disconnecting, moving, or servicing equipment, you must turn off the power. Normally, however, turn off your Lisa only at the end of each week. Always leave your external disk drive, if you have one, turned on.



3 ▸ If you want to throw away the Monthly Results document, move it to the Wastebasket icon.

When the document icon is on the Wastebasket and the Wastebasket icon highlights, release the mouse button and wait for the document to be deposited.

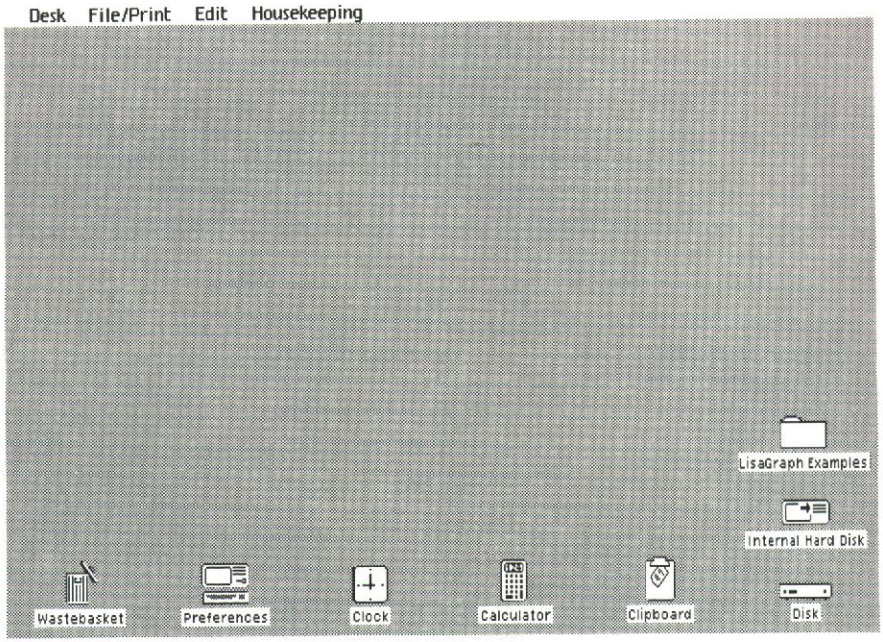
Remember that you can always get back the last thing you've thrown away by opening the Wastebasket icon and moving the deposited document back out.



▸▸▸

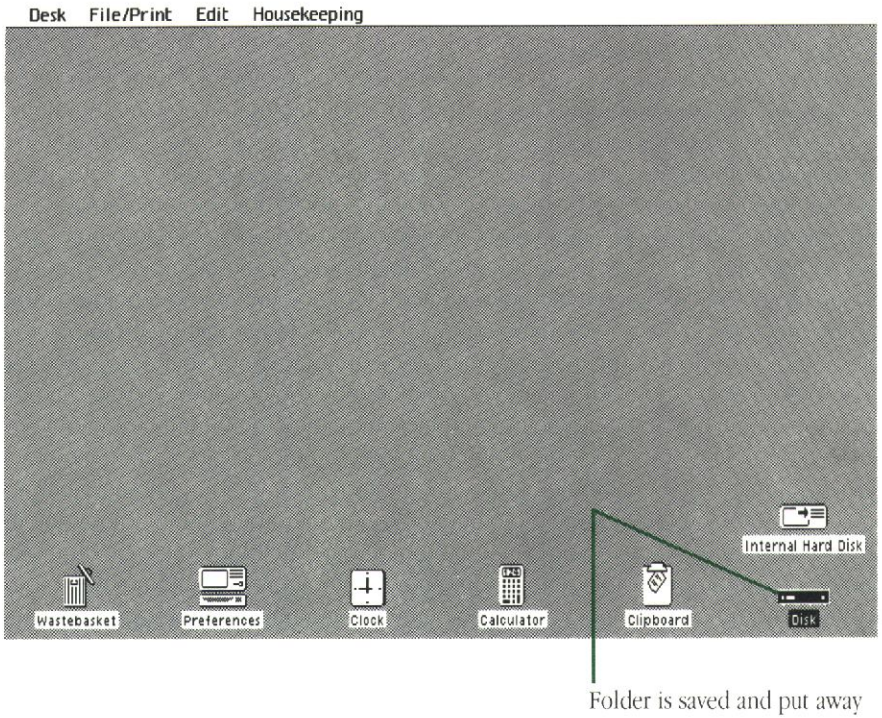
4 ▶ Now set aside both the LisaGraph Examples folder and the disk window; open the **File/Print** menu and choose **Set Aside Everything.**

Notice that both the folder and Disk icons are now set aside on the desktop.



5 ▸ You can put the LisaGraph Examples folder back in its filing home in the disk even when the disk window is closed. To do so, select the LisaGraph Examples folder, open the File/Print menu, and choose **Save & Put Away "LisaGraph Examples"**.

If you want to deselect a selected icon, click once when the pointer is not over the icon.



6 ▸ When you are ready to work on something else, just open the disk window again. When you want to turn off the Lisa's power — for example, over the weekend — press the lit on-off button.

When you turn on the Lisa again, all your documents will reappear just as you left them when you turned off the Lisa, including documents you may have left open on the desktop. Always leave the external disk drive, if you have one, turned on.

Using LisaGraph

You now have the basic skills needed to produce your own LisaGraph documents. Because the concepts for using each Lisa tool are the same, you also have some of the skills needed to use other Lisa tools — LisaCalc, LisaDraw, LisaList, LisaProject, and LisaWrite.

To learn more about LisaGraph, go on to Chapter 2, Using LisaGraph. If you have questions about specific LisaGraph features or menus, refer to Chapter 3, LisaGraph Reference.

For answers to questions about the Lisa desktop, on which LisaGraph and other Lisa tools work, see the *Lisa Office System* manual.

Chapter 2

Using LisaGraph

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LisaGraph Essentials

The information on the following pages outlines the basic LisaGraph concepts and procedures with which you should be familiar before using LisaGraph. It also describes the LisaGraph window and helps you to plan a graph. You should read and understand this information before using the remainder of the chapter.

Before You Begin

Before you begin this chapter, be sure you've gone through LisaGuide, which gives you practice working with a LisaGraph document. You should now feel comfortable with special terms, such as *selecting* and *choosing*, used in reference to the Lisa.

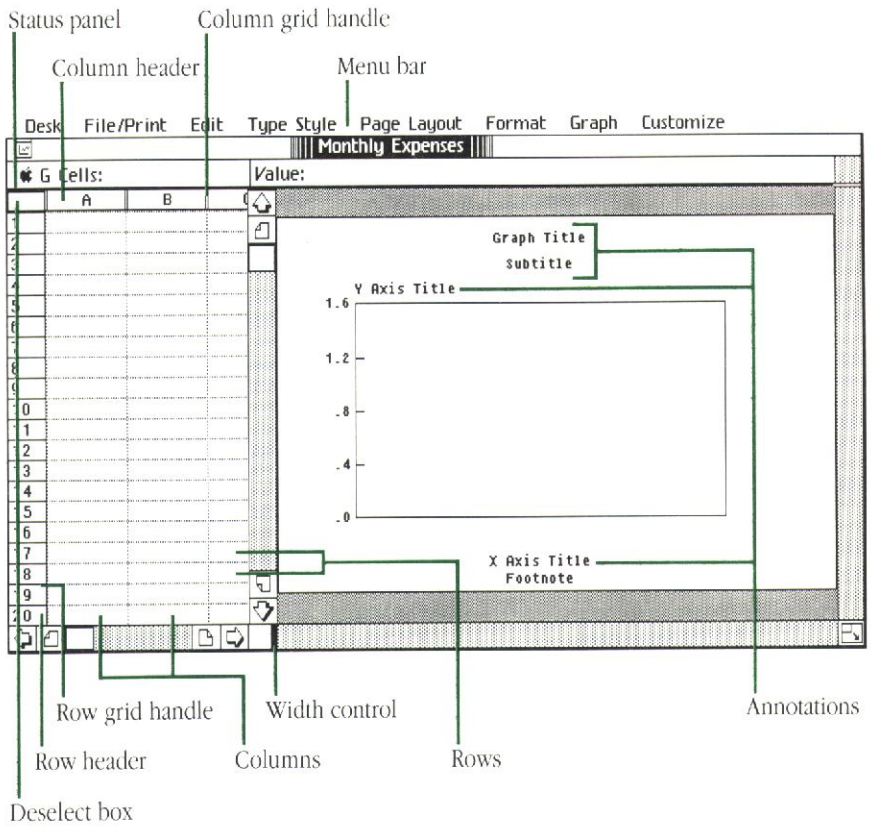
Procedures you should understand before beginning this chapter include the following:

- How to move the pointer around the screen using the mouse.
- How to open menus and choose menu items.
- How to select text or objects on the screen.
- How to open and save documents.
- How to change the size of a window and how to move a window around on the desktop.
- How to scroll the window to see different parts of the document.

If you need help, or if you want to refresh your memory, now is a good time to review LisaGuide once more. Refer also to Chapter 3, Basic Operations, in the *Lisa Office System* manual.

The LisaGraph Window

When you open a new LisaGraph document, you'll see a table displayed on the left side of the document window and a blank graph frame displayed on the right side of the document window. The table is arranged in columns and rows, and the graph frame is displayed with annotation guidelines, as shown below.



The Menu Bar shows the names of the LisaGraph menus that you can use to perform specific operations.

The Status Panel consists of two areas: the *Cells area* and the *Value area.*

The Cells Area tells you which cell or range of cells is currently selected.

The Value Area displays the contents of the selected cell and the kind of value it contains (number, text or date). When two or more cells or a column/row grid are selected, the Value area remains blank.

A Cell is the intersection of any column and row in the table. A cell is identified by its coordinates, which are the column letter followed by the row number (for example, cell A1 is the intersection of column A and row 1).

Rows run horizontally across the table and are identified by numbers down the left side. There are 255 rows in the table (labeled 1 through 255).

Columns run vertically down the table and are identified by the letters across the top. There are 255 columns in the table (labeled A through Z and AA through IU).

A Row Header is the box at the left side of a row. The row header is used to select that row.

A Column Header is the box at the top of a column. The column header is used to select that column.

A Grid Handle is the dividing line between any two column or row headers. The grid handle is used to make a selection between columns or rows.

The Deselect Box is the blank box at the upper left corner of the table. The deselect box is used to cancel the current selection.

The Width Control is a moveable bar that controls the proportion of the LisaGraph window allotted to the table or the graph.

Annotations

Annotations identify information on the graph.

Graph Title identifies the topic of the graph; for example, Sales and Profits for the Past Ten Years or New Product Sales Distribution.

Subtitle provides a more specific frame of reference for your audience; for example, Western Region or Best Sellers.

Footnote adds meaning to the graph; for example, an explanation of the figures, the preparer's name, or the information source.

X-Axis Title describes what is represented on the X-axis.

Y-Axis Title describes what is represented on the Y-axis.

In addition, the following annotations automatically appear when the graph is plotted:

Legend displays each pattern currently being used on the graph. Each pattern identifies one column of information, up to a total of eight patterns.

X-Axis labels are the range of values on the horizontal axis of the graph, which LisaGraph takes from column A of the table to identify bars or data points on the graph. These labels can be text (for example, Sales/Expenses/Profits) or numbers (for example, 1975-1985).

Y-Axis labels are the range of values on the vertical axis of the graph, which LisaGraph automatically generates from information in Columns B through I to identify bars or data points on the graph. These labels must be numbers only (for example, $1000/$3000/$5000).

View Controls

The LisaGraph window is bordered by view controls at the right side and bottom edge of the table. In addition, view controls appear at the right side and bottom edge of the graph when you display the graph in its actual size. When you can't see all the information in the table or graph, use the view controls to scroll hidden portions into view. For complete information on Lisa scrolling procedures, refer to the *Lisa Office System* manual.

Selecting Parts of a Table or Graph

When you want to add, delete, revise or customize any part of a table or graph, you must always take two steps:

1. Select the appropriate part of the table or graph.
2. Perform the operation on that part.

For example, to enter information in a cell in the table, you must first select the cell and then type the entry. To delete a row from the table, you must first select the row and then delete it.

The part you select is referred to as the *selection.* The current selection is displayed in white letters on a black backgound (instead of the usual black on white). Selecting any other part of the table or graph cancels the current selection.

For complete information on basic Lisa selecting procedures, refer to the *Lisa Office System* manual.

How to Select Parts of a Table or Graph

To Select One Cell in the Table	Click once in the cell.
To Select a Group of Cells	Press and drag from left to right, top to bottom, or from the top left cell in the group through to the lower right cell in the group.
To Select One Word in the Table	Click once in the cell that contains the word. Double-click on the word.
To Select One or More Characters in an Entry in the Table	Click once in the cell that contains the entry. Press and drag through the characters you want to select.
To Select One Row in the Table	Click once in the row header.
To Select Several Rows	Press and drag from the first row header down to the last row header.
To Select One Column in the Table	Click once in the column header.
To Select Several Columns	Press and drag from the first column header through to the last column header.
To Set an Insertion Point between Two Columns or Two Rows	Click on the grid handle between columns or rows.
To Select One Word on the Graph	Double-click on the word.

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How to Select Parts of a Table or Graph, continued

To Select One or More Characters on the Graph	Press and drag through the characters you want to select.
To Select One or More Lines of Text on the Graph	Triple-click on the line or lines.
To Select the Entire Table	Open the **Edit** menu and choose **Select All of Table**.
To Select the Entire Graph	Open the **Edit** menu and choose **Select All of Graph**.
To Deselect, or to Select Nothing	Click once in the deselect box at the upper left corner of the table.

Creating a New Graph

When you want to create a new graph, you begin by tearing off a piece of LisaGraph stationery, naming the graph and opening it. You then enter information in the table, and LisaGraph automatically plots the graph, which you can annotate with titles or notes.

Opening a New Graph

To Open a New Graph:

1▸ Select the disk by clicking once on its icon.

2▸ Open the **File/Print** menu and choose **Open Disk**.

3▸ Select the LisaGraph paper by clicking once on its icon.

4▸ Open the **File/Print** menu and choose **Tear Off Stationery**.

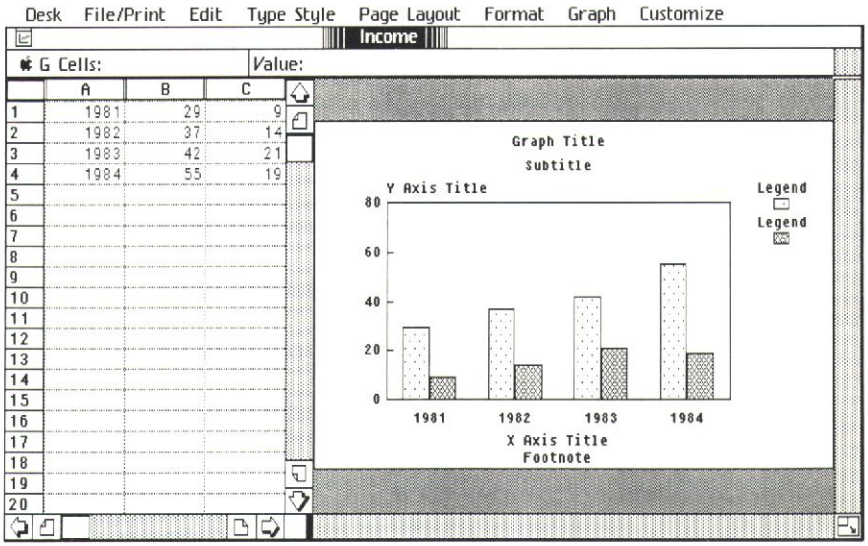
5▸ Type a name for the new graph. (This name can be of any length.)

6▸ Open the **File/Print** menu and choose **Open "Your Graph Name"**.

For a shortcut to starting a new graph, see Shortcuts and Alternatives later in this chapter.

Entering Information in the Table

Any information you type in a cell is called a value. When you enter information in the table, LisaGraph pairs the value you enter in Column A with the value you enter in Column B in the same row, calculates the Y-axis labels, plots the intersection of the information (called a *data point*), and displays the first bar of the graph. LisaGraph plots a bar graph as the standard graph. LisaGraph continues pairing values in Column A with the values you enter in the remaining columns, through Column I. As you enter information in a new column, LisaGraph automatically displays a new bar and legend captions, until all information is plotted.



Entering Information in Column A

Values in Column A can be text or numbers. LisaGraph uses values in Column A as X-axis labels on the horizontal axis of the graph. These labels explain what each of the bars or points on a graph represent.

On bar graphs, stacked bar and solid bar graphs, the values in column A of the table are evenly spaced across the bottom of the graph in the same order as they appear in the table.

On pie charts, each value in Column A appears as a label beside the segment of the pie it identifies. The labels (and segments of the pie) are displayed in the same order in which you enter the information in the table. Labels on a pie chart are *not* reordered according to percentage or any numerical order. To change the appearance of the pie chart to best display your information, you may need to change the order of the rows. See Moving and Copying Information.

On line charts, scattergrams, and area charts, LisaGraph displays X-axis labels in one of two ways:

- If any value in Column A is *text,* the labels are displayed across the bottom of the graph in the same order as they appear in the table.
- If the values in Column A are *numbers only,* LisaGraph calculates a numeric range for the X-axis labels. The X-axis labels are then ordered from lowest to highest value and are not plotted in the same order as they appear in the table.

Entering Information in Columns B-I

In order to be plotted on the graph, values in Columns B through I must be numbers. If you enter text, LisaGraph ignores the value and does not plot the information for that data point.

LisaGraph uses the numbers you enter in Columns B through I in two ways:

- To calculate the range of Y-axis labels. As you enter information in new columns, LisaGraph recalculates and changes the range of Y-axis labels as necessary.
- To establish the legend (the pattern used to represent each category of information) on the right side of the graph. LisaGraph automatically displays a new legend when information is entered in Columns B through I. You can annotate the legend after you enter information in a new column.

Columns J-IU

The values you enter in columns J through IU are not plotted on the graph, but can be used as a storage place for information. This allows you to transfer information from a LisaCalc spreadsheet, which is the same size as LisaGraph's table, then move information to make the graph appear the way you want.

Typing Entries in the Table

You enter information in the table by selecting cells and typing entries. You can enter information in any order you like — across a row, down a column, or at random in the table if only certain pieces of information are available at the time.

After you type an entry in the current cell, you can use any of the keys illustrated below and described in the table below to enter the value and select the next cell.

Entering Information and Selecting Cells

Use This	For This Result
Tab	Selects the next cell to the right.
Arrow keys	►, ◄, ▲, or ▼ selects the cell to the right, left, above or below.
Return	Selects the first cell in the next row.
Enter	Makes the entry without selecting a different cell.
Mouse	Click once in any cell to select that cell.

To Enter Information in the Table:

1 ► Select the first cell in which you want to enter information. The cell coordinates are displayed in the Cells area of the Status panel.

2 ► Type the entry. As you type, the entry is displayed both in the cell and in the Values area of the Status Panel.

Note: If you want to enter a negative number, you must type a minus sign (−) before the number (as in −20).

3 ► Make this entry and select another cell by pressing one of the keys described in Table 1.

If asterisks appear in a cell after you enter information, the entry is too wide for the cell to display. You can either view the complete entry in the Value area of the Status Panel when the cell is selected, or widen the column if necessary (see Changing Column Width, under Changing the Appearance of a Table).

►►►

When you use Tab to enter information, the columns automatically move to the left so that the next column in which you want to enter information is displayed.

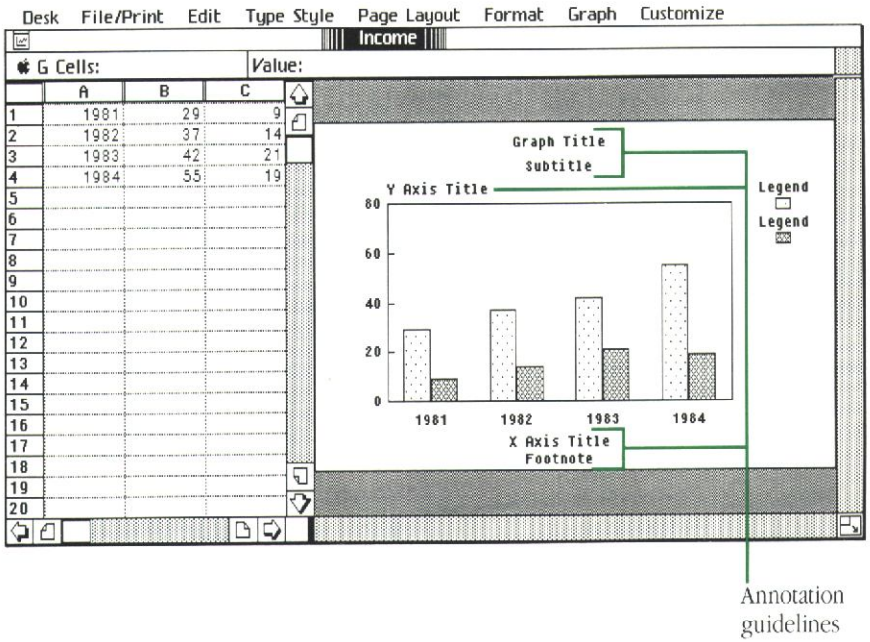
After you type your last entry anywhere in a row, press Return to select the first cell at the beginning of the next row. The columns automatically move to the right to display the first columns in the table.

4 ▶ Repeat steps 1 through 3 to enter all your information in the table.

Annotating the Graph

As you enter information in the table, LisaGraph automatically plots the graph. To present information more clearly, you can annotate the graph with titles or headings, explanations or notes.

LisaGraph provides guidelines for placing annotations on the graph. These guidelines are shown below and described in The LisaGraph Window, under LisaGraph Essentials. Annotation guidelines indicate the type of annotation and a typical position on the graph where the annotation would be used.



You can:

- Replace these annotations with identifying information,

  or

- Remove unused annotations,

  or

- Add other annotations in any blank area on the graph.

For example, you can center a title over the graph, or make a footnote about events which influenced trends shown in the graph (such as a company reorganization or change in accounting procedures).

Because LisaGraph automatically calculates the X- and Y-axis labels from information you enter in the table, you can only change these annotations by changing the X- or Y-Axis range. See Changing the X- or Y-Axis Range, under Changing the Appearance of the Graph.

Legend Annotations

A legend is a box on the right side of the graph that displays the patterns used on the graph. LisaGraph automatically provides a legend for the information you enter in each of Columns B through I.

The legend annotation is directly centered over the legend, and is the only annotation in a fixed position. You can replace or remove this annotation using the procedures below, but the legend is still displayed on the graph unless you hide the graph legends. Refer to Hiding the Graph Legends, under Changing the Appearance of a Graph.

Replacing Annotations

To Replace Annotations on the Graph:

1 ▸ Select the annotation by double-clicking for a single word or triple-clicking for the entire annotation.

2 ▸ Type the new annotation, which automatically replaces the guideline.

Removing Annotations

To Remove Unused Annotations from the Graph:

1 ▸ Select the annotation you want to remove by double-clicking for a single word or triple-clicking for the entire annotation.

2 ▸ Open the **Edit** menu and choose **Cut**.

Adding Other Annotations to the Graph

To Add Your Own Annotations to the Graph:

1 ▸ Move the pointer to the area on the graph where you want to add an annotation.

2 ▸ Click once to set the insertion point. The insertion point (a blinking vertical line) shows where the next typed character goes.

3 ▸ Type the annotation.

LisaGraph immediately displays the annotation on the graph.

Opening an Existing Graph

Once you create a graph, you can go back to make changes at any time. You can revise the graph as soon as you create it, or after it has been saved and put away.

If the graph has been put away, you must begin by opening the graph.

To Open an Existing Graph:

1 ▸ Select the disk or diskette by clicking once on its icon.

2 ▸ Open the **File/Print** menu and choose **Open "Disk" or Open "Diskette"**.

3 ▸ If you have filed the graph in a folder, click once on the folder's icon.

4 ▸ If the graph is in a folder, open the **File/Print** menu and choose **Open "Your Folder"**.

5 ▸ Select the graph by clicking once on its icon.

6 ▸ Open the **File/Print** menu and choose **Open "Your Graph"**.

For a shortcut to opening an existing graph, see Shortcuts and Alternatives, later in this chapter.

Basic Editing Operations

The basic Lisa editing operations allow you to edit information in the LisaGraph table and graph. You can

- Change a complete entry or part of an entry.
- Insert additional text in an entry.
- Cancel an editing operating by undoing the last change or restoring the previous entry.

The information on the following pages describes these procedures as applied to editing with LisaGraph. For complete information on Lisa editing operations, refer to the *Lisa Office System* manual.

Changing an Entry

Changing an entry replaces the current selection with the new information you type. You can change the complete entry or part of the entry in the table or on the graph. The new information can be longer or shorter than the original information, since the remaining letters or numbers adjust to fit.

Changing an Entry in the Table

When you change information in Column A in the table, LisaGraph automatically changes the X-axis labels on the graph. When you change information in Columns B through I, LisaGraph recalculates and replots the Y-axis range of labels on the graph if necessary.

To Change an Entry in the Table:

1 ▶ Select the cell that contains the entry by clicking once in the cell.

2 ▶ If you want to change the whole entry, go to step 3.

If you want to change part of the entry, press and drag through the part you want to change.

3 ▶ Type the new entry.

4 ▶ Press Enter or select anything else on the table or graph to enter the new information. If asterisks appear in a cell after you enter the new information, you can adjust the column width to display the complete entry (see Changing Column Width, under Changing the Appearance of a Table).

Changing an Annotation on the Graph

You can change any annotations that you typed on the graph, including the title, subtitle, legend caption, X- and Y-Axis titles, and any footnotes. Because LisaGraph automatically generates the X- and Y-axis labels, you cannot change these labels.

If you previously chose different type styles for annotations, that same type style is used for the new annotations.

To Change an Annotation on the Graph:

1 ▸ Select the annotation by double-clicking for one word or triple-clicking for the entire annotation.

2 ▸ If you want to change the entire annotation, go to step 3.

If you want to change part of the annotation, press and drag through the part you want to change.

3 ▸ Type the new annotation.

4 ▸ Press Enter or select anything else on the table or graph to enter the new information. LisaGraph immediately displays the new annotation.

Inserting Text in an Entry

Text is any entry or part of an entry, and can be numbers or letters. Inserting text adds information to one particular cell in the table, or annotation on the graph. You can insert text in a blank cell or area on the graph, or where there is already an entry.

To Insert Text in an Entry in the Table:

1 ▸ Click once in the cell that contains the entry.

2 ▸ If the cell is blank, go to step 3.

If the cell already contains text, position the pointer where you want to insert text and click once to set the insertion point (a blinking vertical line). The selected cell is now bordered by a dark line, but the interior background is white.

3 ▸ Type the text you want to insert.

4 ▸ Press Enter or select anything else on the table or graph to enter the new information.

To Insert Text in an Annotation on the Graph:

1 ▸ Click once between characters where you want to insert text. The insertion point is marked by a blinking vertical line.

2 ▸ Type the text.

3 ▸ Press Enter or select anything else on the table or graph to enter the new information. LisaGraph immediately displays the changed annotation.

Cancelling a Change

When you change a cell in the table or an annotation on the graph, you can cancel the change while the information is still selected. After you press Enter or select another part of the table or the graph, you can no longer reverse the effect of the change.

There are two ways to cancel a change:

- Undo the last change
- Restore the previous entry.

When you undo the last change, *you reverse the most recent operation;* that is, the very last change you made is undone, or cancelled.

When you restore the previous entry, *you cancel all changes made since the information was selected,* and the original entry is put back.

Undoing the Last Change

Undo the last change to reverse the effect of the very last change you made. When you do this, it's as though you never made the last change. This is useful when you unintentionally changed an entry.

You must undo the change while the information is still selected. If you press Enter or select another part of the table or graph, you cannot undo any changes.

You can undo the following operations:

Change Column Width	Cut
Change Type Style	Format
Clear	Insert a Blank Row or Column
Copy	Paste

If LisaGraph cannot undo the last change, a message to that effect is displayed.

To Undo the Last Change:

1 ▸ Open the **Edit** menu and choose **Undo Last Change**.

Restoring the Previous Entry

The previous entry is the entry that was in the column, row or cell in the table, or directly typed on the graph, before you made any changes to the entry. Restoring the previous entry cancels all changes made to it since it was selected. This is useful when you make changes, and then decide you preferred the original version.

You can only restore the previous entry while the information is still selected. As soon as you press Enter or select another part of the table or the graph, you *cannot* restore the previous entry.

To Restore the Previous Entry:

1 ▶ Open the **Edit** menu and choose **Restore Previous Entry**.

Adding Information to the Table and Graph

You can add information to a graph in two ways:

- Add rows to the table.
- Add columns to the table.

If you add a column of information, you create a new category of information. If you add a row of information, you add new information under existing categories.

When you enter information in any cell in Column A, LisaGraph automatically adds a new X-axis label to the graph (or segment label on a pie chart). When you enter information in any cell in Columns B through I only, LisaGraph automatically plots the graph. If you enter new information which is out of the current range, LisaGraph also recalculates the Y-axis range of labels.

Inserting a Row

You can add rows anywhere on the table. A table can have up to a total of 255 rows. When you insert a row, LisaGraph automatically renumbers the other rows accordingly.

To Insert a Row:

1 ▶ Select the position where you want to add the row by clicking once on the grid handle between row headers.

2 ▶ Open the **Edit** menu and choose **Insert Blank Row**.

A blank row is then inserted in the table. LisaGraph automatically reorders the table.

3 ▶ Select cells and enter information in the row (if you need help, see Typing Entries in the Table, under Creating a New Graph).

LisaGraph automatically calculates the information and plots it on the graph.

When you enter information in any cell in Column A, LisaGraph automatically adds a new X-axis label to the graph.

Inserting a Column

You can add columns anywhere on the table. A table can have as many as 255 columns (A through Z, and AA through IU).

When you insert a column, LisaGraph automatically reorders the remaining columns and assigns new letter headings to the columns. When you enter information in the column, a legend caption appears on the side of the graph.

To Insert a Column:

1 ▸ Select where you want to insert the column by clicking once on the grid handle between column headers.

2 ▸ Open the **Edit** menu and choose **Insert Blank Column**.

A blank column is then inserted in the table. LisaGraph automatically reorders the table.

3 ▸ Select cells and enter information in the column (if you need help, see Typing Entries in the Table, under Creating a New Graph).

4 ▸ Identify the new category of information by clicking twice on the **Legend** guideline and typing a new annotation.

Deleting Information from the Table or Graph

You can delete any portion of a table or graph: a single cell, row or column; a group of cells, rows or columns; all or part of an annotation on the graph; or even the entire table.

- Deleting all or part of an entry (letters or numbers) in one cell or several adjacent cells removes information from the table and from the graph. For example, if you want the graph to display profits by area number only, you would delete text which names the area.
- Deleting a row removes additional information for all the categories in the table and the graph. For example, if you want the graph to display the birth rate in various parts of the world for the past five years only, you would delete rows containing information on earlier years.
- Deleting a column removes a whole category of information from the table and graph, including the graph legend for that category. For example, if you want the graph to display sales by region but not total sales, you would delete the column containing total sales.
- Deleting annotations from the graph removes information which does not contribute to the graph's effectiveness.

You can delete information from the table or graph in two ways:

- Cut entries.
- Clear entries.

Whether you cut or clear entries in the table, LisaGraph automatically recalculates the data points, changes the X-axis labels (if information in Column A is deleted), recalculates the Y-axis labels (if information in Columns B through I is deleted), and replots the graph.

Cutting Entries

Cutting cells, rows, columns, or annotations deletes the selected entry from the table or graph and places it on the Clipboard. Anything that is on the Clipboard can be pasted back into the table or graph.

Only one entry at a time can be placed on the Clipboard. When you cut or copy a second entry, you replace the first entry on the Clipboard. If you want to move or copy entries, you *must* paste your first entry back into the table or graph before cutting anything else.

You can cut one cell, row or column, or several adjacent cells, rows, or columns. You often cut an entry because you want to move it to a new location. You can also cut an entry to completely remove it from the graph.

When you cut a row or column, any remaining rows or columns in the table are moved automatically by LisaGraph to close the space. LisaGraph then reorders them in sequence (Rows 1 through 255 or Columns A through IU).

To Cut a Cell, Row or Column from the Table:

1 ▸ Select the entry you want to delete. If you need help, see Selecting Parts of a Table.

2 ▸ Open the **Edit** menu and choose **Cut**. The selected entry is removed from the table and placed on the Clipboard.

3 ▸ Change the legend captions on the graph as required.

4 ▸ If you change your mind about deleting the information, you can replace it before performing another operation by choosing **Undo Last Change** from the **Edit** menu.

To Cut an Annotation from the Graph:

1 ▸ Select the annotation you want to cut by double-clicking to select one word, or triple-clicking to select the entire annotation.

2 ▸ If you want to cut the entire annotation, go to step 3. If you want to cut part of the annotation, press and drag through the text you want to cut.

3▸ Open the **Edit** menu and choose **Cut**. The selected text is removed from the graph.

4▸ If you change your mind about deleting the text, you can replace it before performing another operation by choosing **Undo Last Change** from the **Edit** menu.

Clearing Entries

Clearing columns, rows or cells deletes the selected entry without placing it on the Clipboard. You *cannot* paste cleared entries back into the table or graph, since the cleared information is not put on the Clipboard. Clear any entries that you want to completely remove.

You can clear one cell, row or column, or several adjacent cells, rows, or columns. When you clear a column or row from the table, the information is removed from the table and graph, but the blank column or row itself remains in the table. This is useful if you want to clear the column or row and replace it with new information.

To Clear a Cell, Row or Column from the Table:

1▸ Select the cell, row or column you want to clear. If you need help, see Selecting Parts of a Table.

2▸ Open the **Edit** menu and choose **Clear Entries**, or press the Clear key at the top left of the numeric keypad for the same result. The information is deleted, but the blank cell, row or column remains.

3▸ Change the legend captions on the graph as required.

4▸ If you change your mind about clearing the information, you can replace it before performing another operation by choosing **Undo Last Change** from the **Edit** menu.

1▸ Select the annotation you want to clear by double-clicking to select one word, or triple-clicking to select the entire annotation.

2▸ If you want to clear the entire annotation, go to step 3. If you want to clear part of the annotation, press and drag through the text you want to clear.

3▸ Open the **Edit** menu and choose **Clear Entries**, or press the Clear key at the top left of the numeric keypad for the same result. The selected text is removed from the graph.

4▸ If you change your mind about clearing the text, you can replace it before performing another operation by choosing **Undo Last Change** from the **Edit** menu.

Moving or Copying Information

LisaGraph allows you to move or copy information from one part of the table to another, or one part of the graph to another.

You can:

- Move or copy a cell, row, or column in the table.
- Move or copy a group of cells, rows, or columns in the table.
- Move or copy annotations on the graph.
- Move or copy any of the above from one table or graph to another.
- Transpose columns or rows in the table.

Moving Information

Move information when you want to take information out of one place in the table or graph and put it in another place.

When you move information, it is cut from the table or graph and placed on the Clipboard. You can then paste this information back into other locations in the table or graph. If you move information in the table, LisaGraph reorders the table, immediately replots the graph, and recalculates the X- and Y-axis labels as required. The information is taken out of its original location when you move it.

Copying Information

Copy information when you want to leave the information in its original place in the table or graph, but repeat the same (or similar) information in another place. After copying, you can change any entries that you want to be different from the original.

When you copy information, LisaGraph places a duplicate copy on the Clipboard. You can then paste this copy into other locations. If you copy information in the table, LisaGraph reorders the table, immediately replots the graph, and recalculates the X- and Y-axis labels as required. The original information is not removed but is duplicated in the new location(s).

Transposing Columns or Rows

When you transpose columns or rows in the table, you take information currently entered vertically in a column and move it to a horizontal line of information in a row, or vice versa. This is often necessary when copying information from another application, such as LisaCalc.

Rules for Pasting

After you cut or copy the entry to the Clipboard, you can choose **Paste** as many times as you like. However, the following rules should be observed:

1. Only one entry at a time can be placed on the Clipboard. When you cut or copy a second entry, it replaces the previous entry on the

Clipboard. Therefore, you should always paste immediately after cutting or copying.

2. The number of cells, rows or columns you select for pasting must be an *exact multiple* of the number of cells, rows or columns on the Clipboard. For example, if you cut three cells, you must select three cells, six cells, nine cells, or so on, in which to paste.

The following table lists the different choices for pasting entries in the table. Step-by-step procedures for moving or copying information follow.

Pasting Information in the Table

Cut or Copy this to the Clipboard	Select This in the Table	Paste for This Result
One cell, row, or column	One cell, row, or column	Exact copy
One cell, row, or column	Several cells, rows, or columns	Information is duplicated in each cell, row or column
Several cells, rows, or columns	The same number of cells, rows, or columns	Exact copy
A range of cells	The top left cell of another range of cells	Exact copy
Several cells, rows, or columns	A number of cells, rows, or columns that is an exact multiple of original number of cells, rows or columns	Information is duplicated the appropriate number of times
One or more rows or columns	A row or column grid handle	Rows or columns are inserted between rows or columns at the grid handle
One or more rows	One or more column headers	Transposes rows into columns
One or more columns	One or more row headers	Transposes columns into rows

Moving or Copying Entries in the Table

You can move or copy a single cell, part of the entry in a cell, or a range of cells to another location in the table.

When you move or copy cells, the entries in the cells retain the number style and alignment they had before they were moved or copied. If there is an entry in the new cell, you can either paste at an insertion point in the entry or replace the complete entry in the cell by pasting on top of it.

To Move or Copy Entries in the Table:

1 ▸ Select the entry you want to move or copy. If you need help, see Selecting Parts of a Table.

2 ▸ To *move* the entry, open the **Edit** menu and choose **Cut**. The information is removed from the table and placed on the Clipboard.

To *copy* the entry, open the **Edit** menu and choose **Copy**. A copy of the information is placed on the Clipboard.

3 ▸ Select the new location for the entries. If you need help, see Table 2; see also Selecting Parts of a Table.

4 ▸ Open the **Edit** menu and choose **Paste**. The entry you moved or copied to the Clipboard now appears in the new location. LisaGraph immediately replots the graph.

5 ▸ If you want to move or copy this same entry to other locations on the table, repeat steps 3 through 5. If you want to move or copy different information, repeat steps 1 through 5.

6 ▸ If you want to change entries in any cells, select the cell and type the new information.

Moving or Copying Rows or Columns

You can move or copy one or more rows or columns in a table. Rows and columns can be pasted between two existing rows or columns, or pasted into a blank row or column. In addition, you can move or copy rows or columns on top of existing rows or columns to replace that information.

When you paste the row or column back into the table, LisaGraph immediately reorders the rows or columns, replots the graph and recalculates the X- and Y-axis labels as required. Remember, only the first nine columns are plotted on the graph. Information can be stored in the other columns, but will not be plotted.

To Move or Copy a Rows or Columns:

1▸ Select the row or column you want to move or copy by clicking once in the row or column header.

If you want to move or copy several adjacent rows or columns, press and drag through the row or column headers you want.

2▸ To *move* the row or column, open the **Edit** menu and choose **Cut**. The row or column is cut from the table and placed on the Clipboard.

To *copy* the row or column, open the **Edit** menu and choose **Copy**. A copy of the row or column is placed on the Clipboard.

3▸ Select the new location for the row or column. If you need help, see Table 2; see also Selecting Parts of a Table.

4▸ Open the **Edit** menu and choose **Paste**. The row or column you cut or copied to the Clipboard now appears in the new location. LisaGraph reorders the rows or columns and immediately replots the graph.

5▸ Change the legend captions on the graph as required.

6▸ If you want to move or copy this row or column to other locations in the table, repeat steps 3 through 5. If you want to move or copy a different row or column, repeat steps 1 through 5.

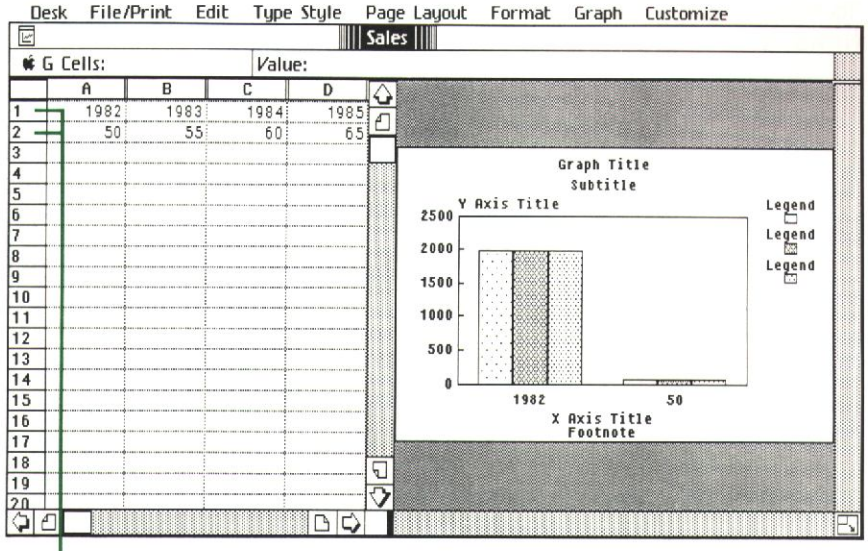
Transposing Columns or Rows

You can transpose information from columns into rows and vice versa.

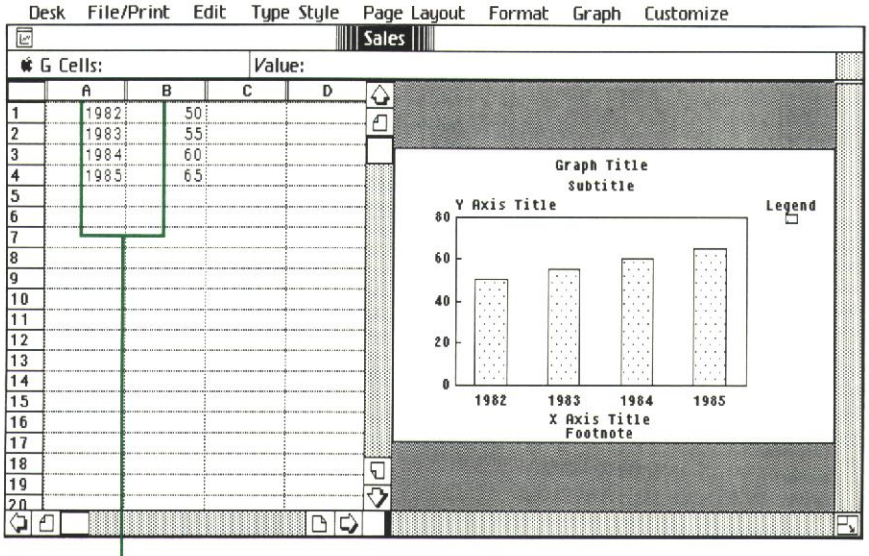
When you transpose columns or rows in the table, you take information currently entered vertically in columns and move it to horizontal rows of information, and vice versa.

This is particularly useful when you transfer information from another application, such as a LisaCalc spreadsheet, and want to rearrange information to create a graph.

This is also useful for correcting the layout of information in the table. For example, suppose you started entering information in the table to graph sales figures for a 4-year period by entering the time periods horizontally on the page and the sales figures underneath. In order to create a graph, you must transpose the time periods in Row 1 into Column A (which then become the X-axis labels) and the sales figures in Row 2 to Column B (which are then plotted for each year).



Rows 1 and 2



. . . are transposed into
Columns A and B

To Transpose Columns or Rows:

1 ▸ Select the columns or rows you want to transpose by pressing and dragging through the column or row headers containing the original information.

2 ▸ Open the **Edit** menu and choose **Cut**. The columns or rows are placed on the Clipboard.

Note: Transposing cannot be done one row or column at a time. You must transpose the entire selection in one move. Columns not selected will be overwritten by the transposed rows.

3 ▸ Select the new location, taking care to choose a blank area:

- To transpose columns into rows, press and drag through the row headers or click once on the grid handle between two rows where you want to insert the information.
- To transpose rows into columns, press and drag through the column headers or click once on the grid handle between two columns where you want to insert the information.

4 ▸ Open the **Edit** menu and choose **Paste**. The columns or rows you copied to the Clipboard now appear in the new location. LisaGraph reorders the table, replots the graph, and changes the X- or Y-axis labels as necessary.

5 ▸ Change the legend captions on the graph as required.

Moving or Copying Text on the Graph

Text is any annotation or part of an annotation you typed directly on the graph or that is provided by LisaGraph in the graph frame, such as a title, legend, or note.

The X- and Y-axis labels, which are generated automatically by LisaGraph, cannot be moved or copied. See Adjusting the X- and Y-Axis Range, under Changing the Appearance of the Graph.

To Move or Copy Text on the Graph:

1 ▸ Select the annotation or part of the annotation you want to move or copy. If you need help, see Selecting Parts of a Graph.

2 ▸ To *move* the annotation, open the **Edit** menu and choose **Cut**. The original text is placed on the Clipboard.

To *copy* the annotation, open the **Edit** menu and choose **Copy**. A copy of the text is placed on the Clipboard.

3 ▸ Select the new location for the text. If you need help, see Selecting Parts of a Graph.

4 ▸ Open the **Edit** menu and choose **Paste**. The text you moved or copied to the Clipboard now appears in the new location.

5 ▸ If you want to move or copy this same text to other locations on the graph, repeat steps 3 through 5. If you want to move or copy different text, repeat steps 1 through 5.

Moving or Copying Information to Another Graph

You can easily move or copy information from one graph to another. You can move or copy all or part of the information in the table or annotations directly on the graph.

Move information when you want to take information out of one graph and put it in another graph.

Copy information when you want to leave the information in your original graph but repeat the same (or similar) information in another graph. After copying, you can change any entries that you want to be different from the original graph.

Moving or copying information from one graph to another follows the same procedures and rules as moving or copying information in the same graph. The only difference is that you have to open the new graph before

you can move or copy information into it. Before moving or copying information from one graph to another, you should be familiar with the basic move and copy operations described on the previous pages.

To Move or Copy Information to Another Graph:

1 ▸ Select the information you want to move or copy.

2 ▸ To *move* the information, open the **Edit** menu and choose **Cut**. The selected information is now placed on the Clipboard.

To *copy* the information, open the **Edit** menu and choose **Copy**. A copy of the selected information is now placed on the Clipboard.

3 ▸ Open the other LisaGraph document by double-clicking on its icon.

4 ▸ Select the new location for the information.

5 ▸ Open the **Edit** menu and choose **Paste**. The information you moved or copied to the Clipboard now appears in the new location, and LisaGraph immediately plots the graph.

6 ▸ If you want to change any information, select the entry and type the new information.

Changing the Appearance of the Table

You can change the appearance of the table in the following ways:

- Change the width of columns.
- Adjust the alignment of entries.
- Change number and monetary styles.
- Change the style of type used to print the table.
- Display the table on the screen in various type sizes.

Changing the appearance of the table does not change any information; it only affects how that information is displayed.

Changing Column Width

When a cell is not wide enough to display its entry, LisaGraph fills the cell with asterisks. You can make the column wider to read the entry in the cell.

Column width only affects how the information in the column is displayed; it does not restrict the amount of information you can enter in the column. The complete entry in a cell always appears in the Value area of the Status panel when the cell is selected.

You can make a column wider or narrower at any time. You can adjust the width of a single column, or set the width of several columns at one time.

To Change the Width of one Column:

1 ▸ Move the cross-hair pointer to the grid handle at the right of the column you want to widen or narrow.

2 ▸ Press and drag to the right to make the column wider, or to the left to make the column narrower. As you move the pointer, a flickering vertical line indicates the right boundary of the column.

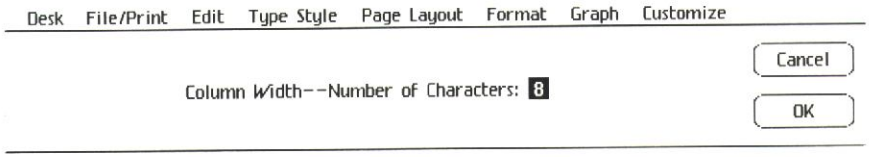
3 ▸ When the column is the width you want, release the mouse button. The asterisks are now replaced by the entries in the cells.

To Change the Width of Several Columns at Once:

1 ▸ Select the columns you want to change by pressing and dragging through the column headers.

2 ▸ Open the **Page Layout** menu and choose **Column Widths**.

3 ▸ A dialog box appears showing the number of characters that can be displayed in the first of the selected columns.



4 ▸ Type a new number for the Number of Characters you want to display.

5 ▸ Click OK in the dialog box.

LisaGraph automatically adjusts all the selected columns to accommodate the number of characters you specified in the dialog box.

Changing the Alignment of Entries

A cell's alignment determines the placement of an entry within the cell. The standard alignment on LisaGraph stationery places words on the left and numbers on the right in the cell.

You can change the alignment of an entry in one or more cells, including entire columns and rows.

You can change entries so that they are aligned flush left, centered, or flush right, as shown below.

	A	B	C	D
1	JAN	56	95	
2	FEB	86	110	
3	MAR	95	132	
4	APR	123	148	
5	MAY	129	154	
6				
7				
8				

Words left, numbers right

	A	B	C	D
1	JAN	56	95	
2	FEB	86	110	
3	MAR	95	132	
4	APR	123	148	
5	MAY	129	154	
6				
7				
8				

Left flush

	A	B	C	D
1	JAN	56	95	
2	FEB	86	110	
3	MAR	95	132	
4	APR	123	148	
5	MAY	129	154	
6				
7				
8				

Centered

	A	B	C	D
1	JAN	56	95	
2	FEB	86	110	
3	MAR	95	132	
4	APR	123	148	
5	MAY	129	154	
6				
7				
8				

Right flush

To Change the Alignment of Entries:

1 ▸ Select the cell or cells you want to change.

2 ▸ Open the **Format** menu and choose an alignment option.

If you choose an alignment option when the cells are blank, any information you then enter is displayed in the alignment you select.

If you choose an alignment option after you have entered information in the cell, LisaGraph displays existing information in the alignment option you select.

Changing Number or Monetary Styles

LisaGraph displays entries according to the number or monetary style you choose. This style is displayed when the cell is not selected. When the cell is selected, the entry is *always* displayed in floating decimal number style.

Some number styles require that LisaGraph round a number. In this case, the value of the number is not changed, only the way it is displayed. If the number after the decimal point ends in 5, the entry is rounded to an even number to ensure an accurate average. For example:

1234.5 is rounded and displayed as 1234

1235.5 is rounded and displayed as 1236

Changing Number Styles

The number style you choose is displayed when the cell is not selected. When the cell is selected, the entry is *always* displayed in floating decimal number style. The LisaGraph number styles are:

Floating Decimal Shows numbers in the most convenient style for the size of the value and the width of the column.

No Decimal Shows numbers rounded to the nearest whole number.

Fixed Decimal Shows numbers with a fixed number of decimal places.

Scientific Shows numbers with scientfic notation and a fixed number of decimal places.

A positive number after the E means the decimal point in the number is to be moved to the right that many places.

A negative number after the E means the decimal point in the number is to be moved to the left that many places.

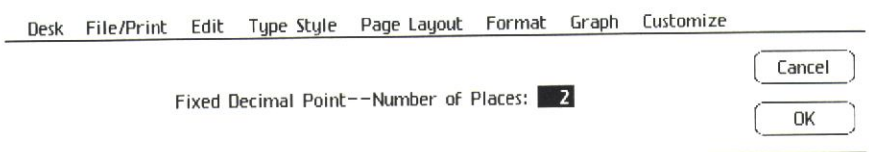
To Change the Number Style:

1 ▶ Select the cell or cells in which you want to change the number style.

2 ▶ Open the **Format** menu and choose a number style.

LisaGraph automatically changes the number style in the table to the format you choose. If you change the number style in Column A, LisaGraph redisplays the X-axis labels on the graph accordingly.

3 ▶ If you choose either the **Fixed Decimal** number style or the **Scientific** number style, a dialog box appears.



This dialog box allows you to set the number of decimal places. The dialog box shows the current setting for the selected cell. If more than one cell is selected when the dialog box appears, it shows the standard setting for decimal places (2).

To set the number of decimal places:

a. Type the number of decimal places you want to use.

b. Click OK.

LisaGraph immediately changes the appearance of each value.

Changing Monetary Style

The monetary style you choose is displayed when the cell is not selected. When the cell is selected, the entry is *always* displayed in floating decimal number style.

Monetary styles display numbers as shown below:

$ 1,234.56	Dollar sign, commas, cents.
1,234.56	Commas, cents.
$ 1234.56	Dollar sign, cents (no commas).
1234.56	Cents.
$ 1,235	Dollar sign, commas (rounded to the whole dollar).
1,235	Commas only (rounded to the whole dollar).
$ 1235	Dollar sign only (no commas, rounded to the whole dollar).
1235	Numbers only (rounded to the full number).

To Change the Monetary Style:

1 ▸ Select the cell or cells in which you want to change the monetary style.

2 ▸ Open the **Format** menu and choose a monetary style.

LisaGraph automatically changes the monetary style in the table to the format you choose. If you change the monetary style in Column A, LisaGraph automatically redisplays the X-axis labels on the graph accordingly.

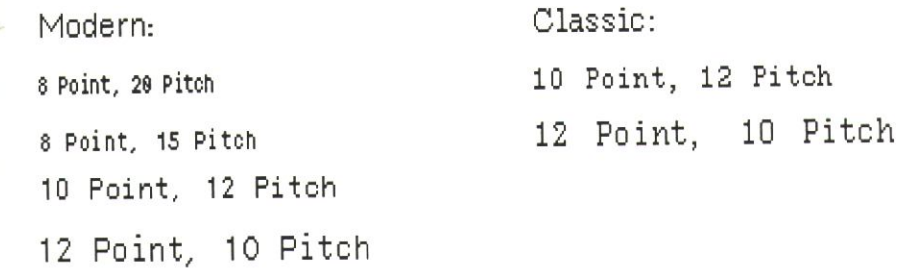
Changing the Type Style for Printing

Type style refers to the kind of characters used to print your table. You can choose either a Modern or Classic type style. When you choose a type style, the entire table is changed. You cannot use different type styles for different parts of the table.

The type style you choose is measured in pitch and point size.

- *Pitch* refers to the number of characters that can be printed horizontally per inch. For example, 10-pitch type prints ten characters per inch.
- *Point* size refers to the height of a printed character — the higher the point size, the larger the character. There are 72 points per inch, so a 12-point character is about one-sixth of an inch high.

These type styles are shown below:



To Change the Type Style for Printing:

1 ▶ Select any cell in the table.

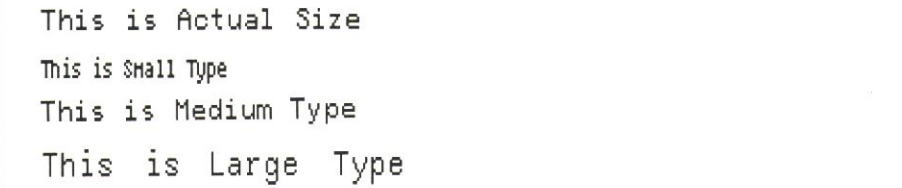
2 ▶ Open the **Type Style** menu and choose a style.

LisaGraph will use this type style to print the table.

Changing the Type Size on the Screen

Type size refers to the size of characters displayed on the screen. The entire table is displayed in one size; you cannot display portions of the table in different sizes.

The table can be displayed on the screen in actual size, or small, medium or large type, as shown below. This size is independent of any type style in which the table will be printed.



Show Actual Size Displays the size of type which will be used to print the table.

Show Small Type Displays 20 characters per inch. This allows more information to be displayed in the same area to that you can easily check the table's appearance.

Show Medium Type Displays 12 characters per inch. This allows information to be displayed in a typical type size.

Show Large Type Displays 10 characters per inch. This allows you to read and edit the values in the table more easily.

To Change the Type Size in Which the Table is Displayed:

1 ▸ Select any cell in the table.

2 ▸ Open the **Type Style** menu and choose a display size from the bottom portion of the menu. LisaGraph automatically displays the table in the size you select.

Remember, this display size does not affect the printing size.

Changing the Appearance of the Graph

You can change the appearance of a graph in the following ways:

- Change the type of graph.
- Combine a line chart with a bar graph.
- Show a prediction (regression) line.
- Hide data points on the graph.
- Display grid lines on the graph.
- Hide graph legends.
- Adjust the X- or Y-axis range of labels on the graph.
- Display the actual size of the graph on the screen.
- Change the size of the graph for printing.
- Change type styles for annotations on the graph.

Changing the appearance of the graph does not change any information; it only affects how that information is displayed.

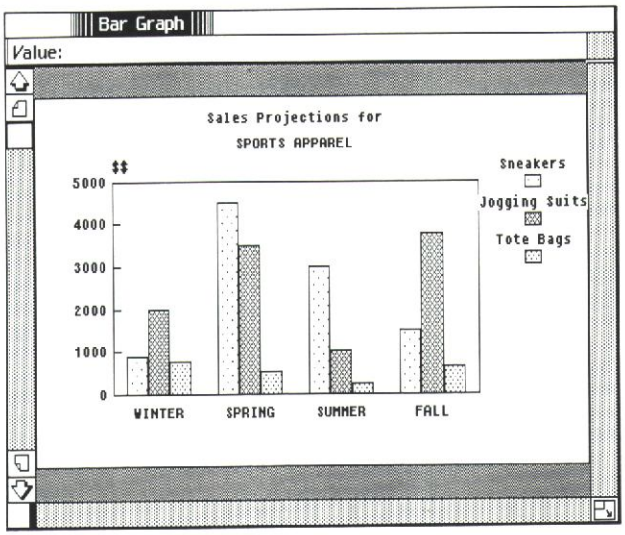
Changing the Type of Graph Displayed

LisaGraph uses the bar graph as the standard graph. This is the type of graph displayed unless you select another type.

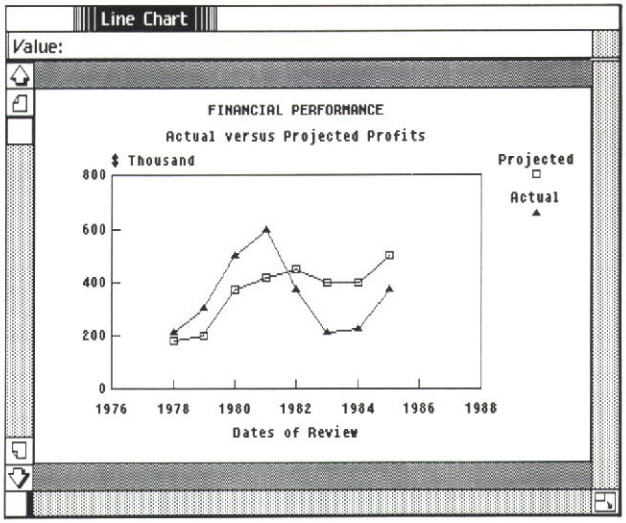
With LisaGraph, you can select the following types of graphs:

- Bar Graph.
- Line Chart.
- Scattergram.
- Pie Chart.
- Stacked Bar Graph.
- Solid Bar Graph.
- Area Chart.

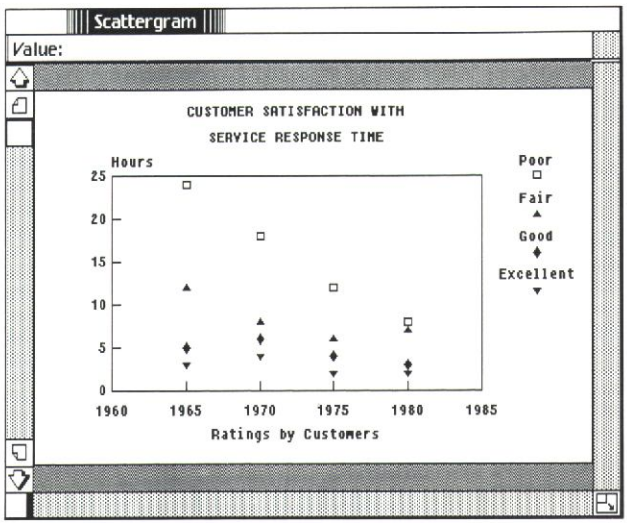
An example of each of these graphs and charts is provided below.



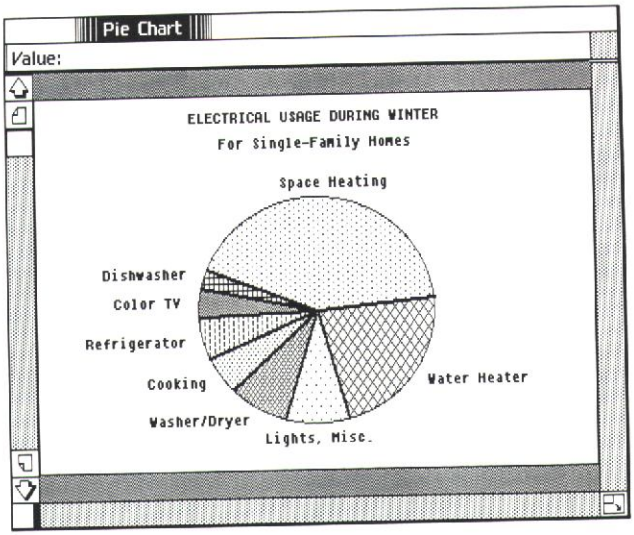
Bar Graph



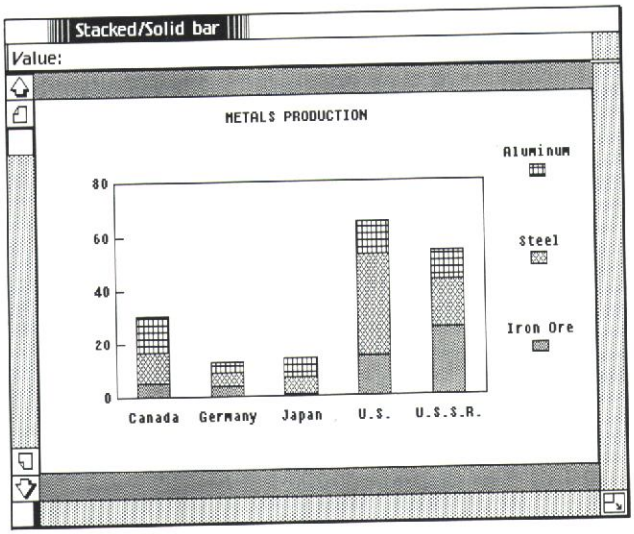
Line Chart



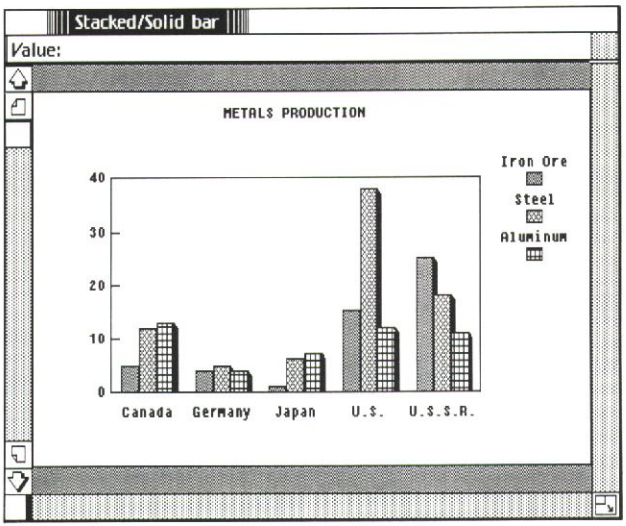
Scattergram



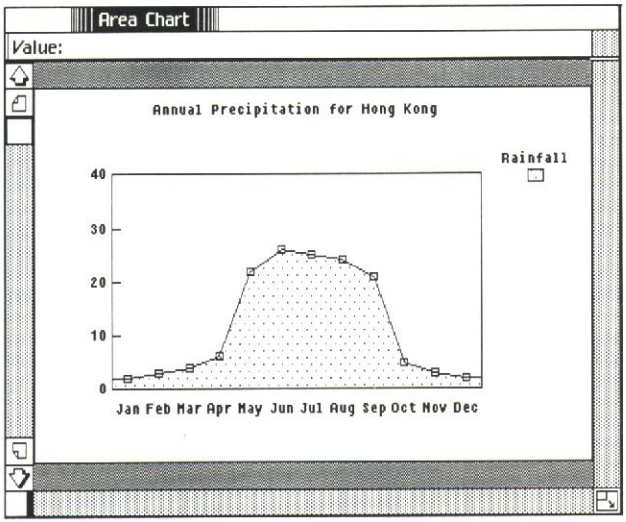
Pie Chart



Stacked Bar Graph



Solid Bar Graph



Area Chart

To Change the Graph Type:

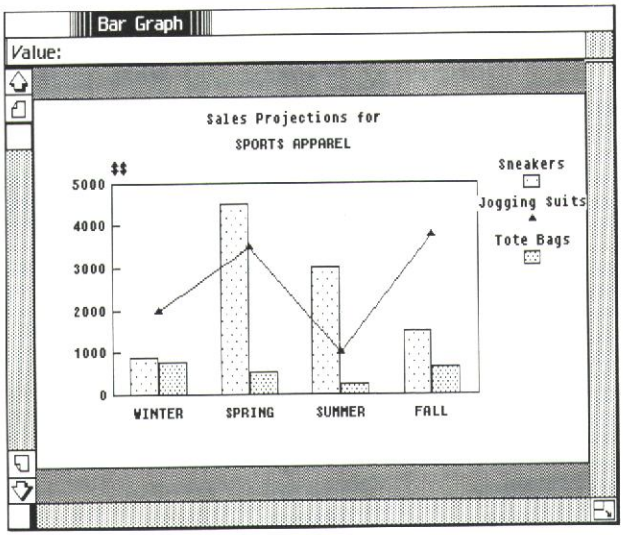
1 ▶ Open the **Graph** menu and choose the type of graph you want to display.

LisaGraph automatically replots the graph as the type you select.

Combining a Line Chart with a Bar Graph

You can plot some information on a bar graph as a line. This is useful when you want to dramatize the comparison between information, such as actual versus projected figures.

You can only plot information from Columns B through I. Information in Column A is used as X-axis labels and cannot be plotted as a bar or line. You can change more than one set of bars to a line, but the line may then lose its impact or the graph may becoming confusing.



To Combine a Line Chart with a Bar Graph:

1 ▸ Be sure the graph you want to change is already a bar graph.

2 ▸ Select the column that contains the information you want to plot as a line.

3 ▸ Open the **Customize** menu and choose **Show as Line**.

LisaGraph automatically plots the information as data points connected with a line, and changes the legend accordingly.

To Change the Line Back to a Bar:

1 ▸ Select the column again.

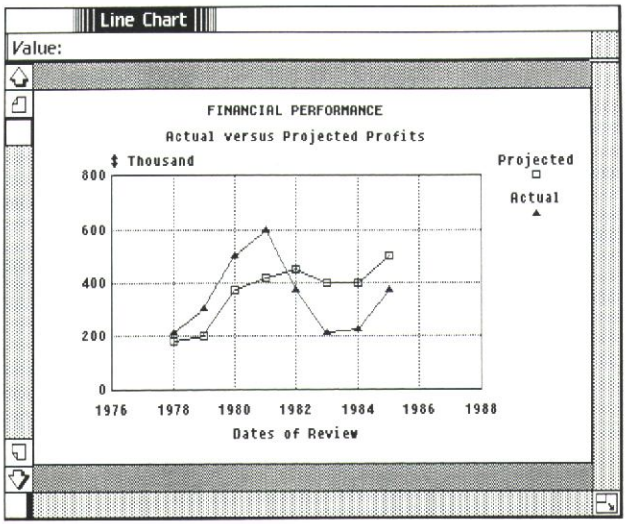
2 ▸ Open the **Customize** menu and choose **Show as Bar**.

Displaying Grid Lines on the Graph

Grid lines help you interpret the position of data points more precisely. The information in your graph determines where grid lines are placed.

- Horizontal grid lines extend across the graph from each Y-axis label at the left border to the right border of the graph.
- When a line graph, area chart or scattergram has a numerical X-axis, vertical grid lines also extend from each X-axis label at the bottom to the top of the graph.

You cannot display grid lines on a pie chart, which has segment divisions instead.



To Add Grid Lines to a Graph:

1 ▶ Open the **Customize** menu and choose **Show Grid Lines**.

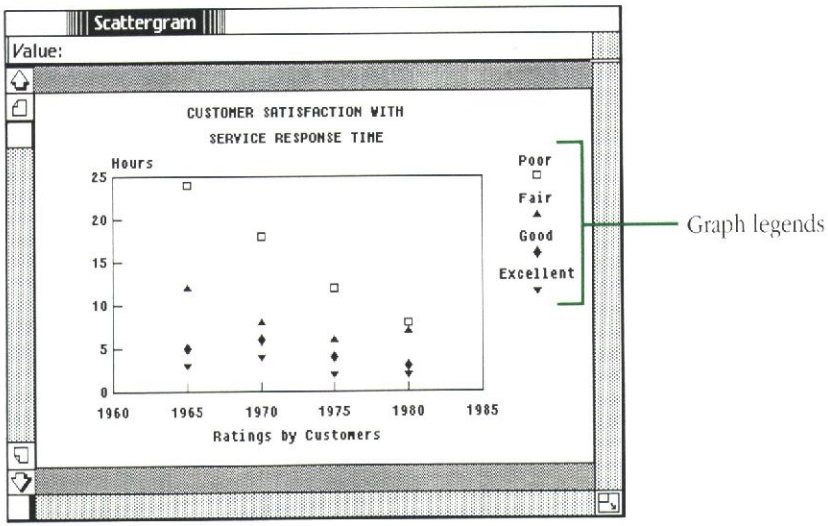
LisaGraph automatically displays grid lines on the graph.

To Hide the Grid Lines:

1 ▶ Open the **Customize** menu and choose **Hide Grid Lines**.

Hiding the Graph Legends

A legend is a box on the right side of a graph that displays the various patterns on the graph. LisaGraph automatically provides a legend when information is entered in Columns B through I. On pie charts, the values in Column A become segment labels and no legend is provided.



If you hide the legends, the graph expands to fill the space the legends occupied. You cannot leave some legends on the graph but hide others.

If you want to replace or remove the annotation above the legend, refer to Annotating the Graph, under Creating a New Graph.

To Hide Graph Legends:

1 ▶ Open the **Customize** menu and choose **Hide Legends.**

LisaGraph removes all legend captions and patterns from the graph and widens the graph to fill the empty space.

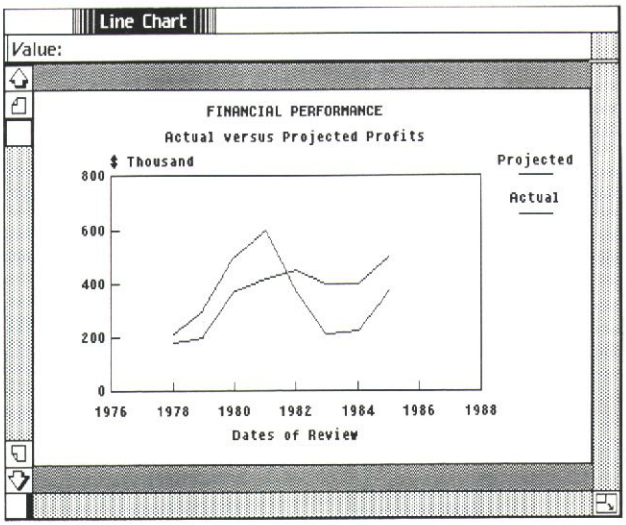
To Display the Graph Legends:

1 ▶ Open the **Customize** menu and choose **Show Legends.**

LisaGraph automatically displays all legend captions and patterns and adjusts the graph to allow space for the legends on the right side of the graph.

Hiding Data Points

A data point is that point on the chart where the value in Column A is paired with the value in one other column (Columns B through I only). When you display a line chart or an area chart, the data points are displayed as boxes and connected with a line. If you want a clean, uninterrupted line on your line or area chart, you can hide the data points.



To Hide Data Points:

1 ▶ Be sure the graph you want to change is already a line chart or an area chart.

2 ▶ Open the **Customize** menu and choose **Hide Data Points**.

LisaGraph automatically changes the chart so that the data points are not displayed. The symbol in the Legend on the chart also changes to a single line.

To Display Data Points:

1 ▶ Open the **Customize** menu and choose **Show Data Points**.

LisaGraph automatically plots the data points and adjusts the legends to display the appropriate symbol.

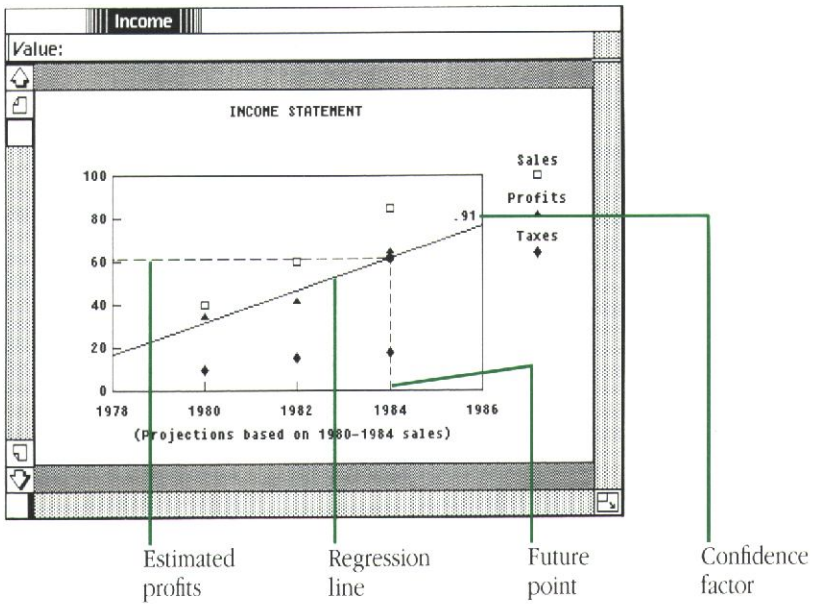
Displaying a Regression (Prediction) Line

If you want to predict the value of something in the future, you can display a regression line.

A regression line is a trend line calculated automatically by least squares fit. This shows the best fit across the data points for one variable (such as profits).

You can predict values for several variables (such as sales, expenses and profits) by selecting one column at a time to display the regression line.

A regression line is most useful for a scattergram, but can be used for bar graphs, line charts and area charts. You cannot display a regression line for a pie chart. On stacked bar graphs, the regression line is drawn relative to a zero baseline, not relative to the stacked position of the bars.



To Display a Regression Line:

1 ▶ Select the column of information for which you want to see a prediction.

2 ▶ Open the **Customize** menu and choose **Show Regression**.

LisaGraph automatically calculates the regression line for the best fit and draws a solid line on the chart through the data points, whether or not they are displayed.

LisaGraph places a number near the endpoint of the line on the right side of the chart, called the correlation coefficient or confidence factor (R-squared). This number describes the amount of confidence you can place in the predicted value, and represents the variation in the information in the selected column (between 0.00 and 1.00 inclusive).

3 ▸ Determine the predicted value by drawing an imaginary line from a future point in time (the X-axis value) to the regression line, then to the Y-axis value. You can change the X-axis range to include a future point in time if you use a line chart or scattergram. See Changing the X-Axis Range.

4 ▸ If you want to display another regression line, repeat steps 1 and 2. To avoid confusion between lines, you should add a comment identifying each line.

To Hide a Regression Line:

1 ▸ Select the column again.

2 ▸ Open the **Customize** menu and choose **Hide Regression**.

LisaGraph automatically hides the regression line and the confidence factor.

Changing the X- or Y-Axis Range of Labels

LisaGraph automatically computes the X-axis range of labels from the information in Column A and the Y-axis range of labels from information in Columns B through I. In most cases, this automatic range of axis labels is appropriate. However, you can customize the range by adjusting the values in the X- or Y-axis range of labels.

Changing the X-Axis Range of Labels

You can *only* change the X-Axis range of labels when:

- You display the graph as a line chart, scattergram, or area chart,

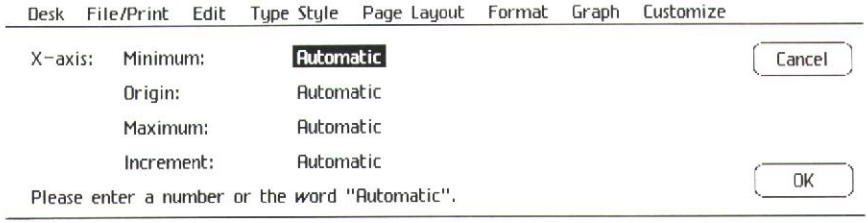
  and

- The values in Column A are numeric.

If you enter text anywhere in Column A, the X-axis labels change to text labels, and you cannot adjust the X-axis range.

On line charts, scattergrams and area charts that have *numbers only* in Column A, LisaGraph automatically computes a range of labels that includes all the numeric values in Column A. These labels appear along the X-axis from the lowest to the highest value; they are not plotted in the same order as they appear in the table.

When you choose **X-Axis Range** from the **Customize** menu, the following dialog box appears:



This dialog box allows you to change one or more of the characteristics of the X-axis range:

Minimum Value The lowest number in the range. This characteristic determines how much space appears between the graph's left border and the lowest value plotted.

Axis Origin The number at which a reference line appears. For the X-axis, the reference line appears as a dotted line running vertically from the X-axis to the top of the graph.

Maximum Value The highest number in the range. This characteristic determines how much space appears between the graph's right border and the highest value plotted.

Increment The quantity or time period between the X-axis labels. Although LisaGraph uses the values in Column A as X-axis labels, you can display a quantity or time period greater or less than the highest and lowest values in Column A. This is useful when plotting a regression line.

The word *automatic* appears in the dialog box when LisaGraph has automatically calculated that particular characteristic. You can type a number for each characteristic or, if you don't select a characteristic, LisaGraph calculates it automatically.

To Adjust the X-Axis Range:

1 ▸ Be sure the graph is displayed as a line chart, scattergram, or area chart and that the values in Column A are numbers.

2 ▸ Open the **Customize** menu and choose **X-Axis Range**.

3 ▸ LisaGraph displays a dialog box that shows the current range.

4 ▸ Select the characteristic in the dialog box by moving the pointer to the characteristic *name* and triple-clicking.

If you don't select a characteristic, LisaGraph calculates it automatically.

5 ▸ Type a number, which replaces the word *Automatic*.

If there is already a number in the characteristic you select, the number you type replaces it. If you type a negative number, you must type a minus sign (−) before the number.

6 ▸ Press Return to move to the next value.

7 ▸ Repeat steps 4 through 6 until the dialog box shows the desired range.

If you typed a number but now want LisaGraph to calculate that characteristic automatically, you can either:

- Type the word *automatic*,

  or

- Press Backspace. This removes the number value and replaces it with the word *automatic*.

8 ▸ When the information in the dialog box is complete, click OK.

The dialog box disappears. LisaGraph automatically recalculates the X-axis range according to your specifications and replots the graph.

Note: If you enter a value in the table that exceeds the axis range you just specified, LisaGraph automatically adjusts the range to include the new value.

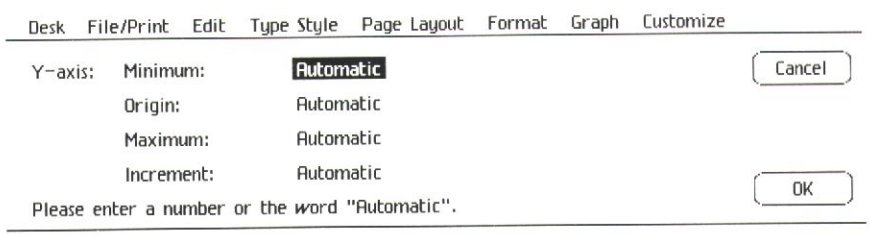
Changing the Y-Axis Range

You can change the range of Y-axis labels to use more of the graph area and present greater contrast in the information if the set-up that you originally specified looks too flat or does not display the information well.

When you enter negative numbers in the table, LisaGraph calculates the range so that bars or lines are inverted; that is, the bars or lines are displayed below the point of origin (which is a line usually drawn at zero). You can change the point of origin for the Y-axis range so that bars are not inverted and thus do not make the same impact.

LisaGraph automatically computes the range of Y-axis labels from the information in Columns B through I in the table for all but pie charts, which have no Y-axis. The range of Y-axis labels is divided into four or five labels that are spaced evenly along the graph's Y-axis.

When you choose **Y-Axis Range** from the **Customize** menu, the following dialog box appears:



This dialog box allows you to change one or more of the characteristics of the Y-axis range:

Minimum Value The lowest number in the range. This characteristic determines how much space appears between the graph's bottom border and the lowest value.

Axis Origin The number at which the reference line appears (the dotted line running horizontally from the Y-axis to the right side of the graph).

Note: Negative values are inverted when LisaGraph sets the axis origin between the lowest and highest numbers. If you set the axis origin at the lowest value, the points that represent negative numbers are no longer inverted.

Maximum Value The highest number in the range. This characteristic determines how much space appears between the graph's top border and the highest value plotted.

Increment The quantity or time period between the Y-axis labels.

The word *automatic* appears in the dialog box when LisaGraph automatically calculates that particular characteristic. You can type a number for each characteristic or, if you don't select a characteristic, LisaGraph calculates it automatically.

To Change the Y-Axis Range:

1 ▸ Open the **Customize** menu and choose **Y-axis Range**.

2 ▸ LisaGraph displays a dialog box that shows the current range.

3 ▸ Select the characteristic in the dialog box you want to change by moving the pointer to the characteristic name and triple-clicking.

If you don't select a characteristic, LisaGraph calculates it automatically.

4 ▸ Type a number, which replaces the word "Automatic".

If there is already a number in the characteristic you select, the number you type replaces it. If you type a negative number, you must type a minus sign (−) before the number.

5 ▸ Press Return to move to and select the next value.

6 ▸ Repeat steps 3 through 5 until the dialog box shows the desired range.

If you typed a number but now want LisaGraph to calculate that characteristic automatically, you can either:

- Type the word *automatic*,

  or

- Press Backspace. This removes the number value and replaces it with the word *automatic*.

7 ▸ When the information in the dialog box is complete, click OK.

The dialog box disappears. LisaGraph automatically recalculates the Y-axis range according to your specifications and replots the graph.

Note: If you enter a value in the table that exceeds the axis range you just specified, LisaGraph automatically adjusts the range to include the new value.

Changing the Size of the Graph

You can change the size of the graph to better view it on the screen or to prepare it for printing.

Displaying the Graph in its Actual Size

LisaGraph automatically reduces a graph to fit into the screen view. Annotations can overlap, making the graph difficult to read. Although you can edit a graph when it is reduced, it is easier to show the actual size of the graph on the screen for editing.

To Display the Graph in its Actual Size:

1 ▸ Open the **Page Layout** menu and choose **Show Actual Size**.

The graph may now be too large to be fully displayed on the screen. To view hidden portions of the graph, use the scroll bars at the bottom and to the right of the graph.

2 ▸ If you change your mind and want to reduce the graph to fit in the graph view again, open the **Page Layout** menu and choose **Reduce to Fit**.

Changing the Size of the Graph for Printing

You can print a graph in one of four different sizes on the page:

- Full Page.
- Half Page.
- Third Page.
- Fourth Page.

LisaGraph automatically adjusts the graph to display the size selected in relation to the paper size and print orientation (horizontal or vertical). See opposite page for examples. For further information on printing, refer to Chapter 3 in the *Lisa Office System* manual.

To Change the Size of the Graph for Printing:

1 ▸ Open the **Page Layout** menu and choose a size option.

LisaGraph automatically reduces the graph to display the size selected in the graph portion of the LisaGraph window.

Changing Type Styles

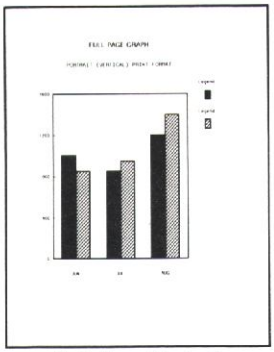
Type style refers to the style of characters used to print annotations on the graph. When you choose a type style, only the annotation you select is changed; you can use different type styles for different annotations on the graph. You must show the graph in its actual size to display the new type style on the screen.

The type styles you can choose are Modern or Classic, which are available in all type sizes.

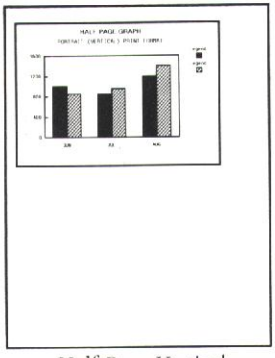
Type styles are measured in pitch and point size.

- *Pitch* refers to the number of characters that can be printed horizontally per inch. For example, 10-pitch type prints ten characters per inch.
- *Point* size refers to the height of a printed character — the higher the point size, the larger the character. There are 72 points per inch, so a 12-point character is about one-sixth of an inch high.

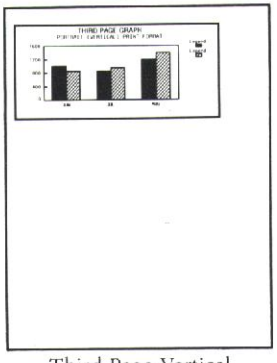
Size and Orientation Choices for Printing Graphs



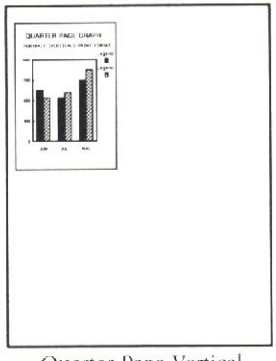
Full Page Vertical



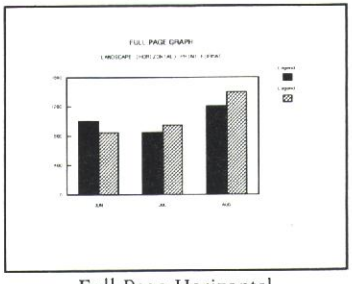
Half Page Vertical



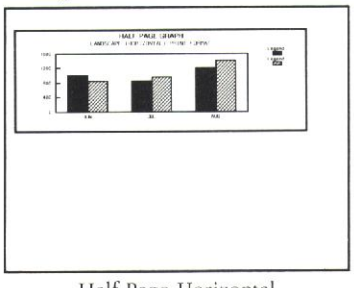
Third Page Vertical



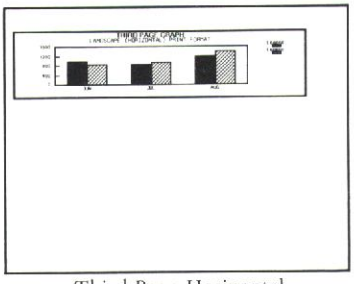
Quarter Page Vertical



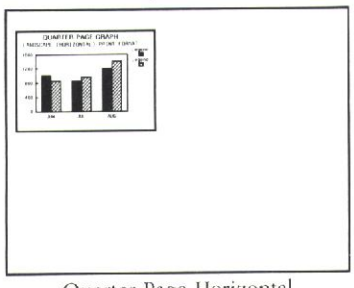
Full Page Horizontal



Half Page Horizontal



Third Page Horizontal



Quarter Page Horizontal

In addition to choosing the type style and size, you can add special emphasis to one word or an entire annotation in any of the following ways:

- Plain.
- Underline.
- Bold.
- Italic.
- Hollow.
- Shadow.

To Change the Type Style on the Graph:

1 ▸ Open the **Page Layout** menu and choose **Show Actual Size**.

2 ▸ Select the annotation you want to change by double-clicking for one word or triple-clicking for the entire annotation.

3 ▸ Open the **Type Style** menu and choose a type style. LisaGraph automatically changes the annotation.

4 ▸ While the annotation is still selected, open the **Type Style** menu again and choose the type size from the menu. LisaGraph automatically changes the annotation.

5 ▸ To add special emphasis, open the **Type Style** menu while the annotation is still selected and choose an emphasis style from the menu. LisaGraph automatically changes the annotation.

Note: You can select more than one style for emphasis, such as combining bold and shadow, by repeating step 5 while the annotation is still selected.

6 ▸ To see the whole graph again, open the **Page Layout** menu and choose **Reduce to Fit**.

Note: When a graph is reduced to fit the graph view, the annotations revert to the original type style on the screen, even if you specified another. It will still print in the type style and with any emphasis you selected.

Using LisaGraph With Other Applications

After you enter information in the table and create a graph with LisaGraph, you can copy all or part of the table or all of the graph or annotations of the graph into documents created with other Lisa applications. You can also copy information into a LisaGraph table from documents created with other Lisa applications.

You can use LisaGraph with:

- LisaCalc.
- LisaDraw.
- LisaList.
- LisaWrite.
- LisaTerminal.
- LisaProject.

Using LisaGraph with any of these applications involves copying information from one document into another in the same way as you would copy information from one table or graph to another. If you are not familiar with the basic copying procedures, see Moving and Copying Information, earlier in this chapter.

Copying Information into LisaGraph

When you copy information into a LisaGraph table from another application, you must paste into an area that is the same size or an exact multiple of the information you are pasting. For further information on pasting information in LisaGraph, see Moving and Copying Information, earlier in this chapter.

If you are copying several cells or fields, a convenient way to paste into a table is to select only the cell in the upper left corner of the new range of cells. LisaGraph automatically pastes the cells you are copying into the remaining range of cells.

Entries retain the cell alignment and number style they had in the document you copied them from, even if you had previously chosen a different alignment and number style for those cells in the table. You can make any necessary changes to the alignment or number style after the entries have been pasted.

When you paste from a LisaList or LisaCalc document, the area you paste into must be the same size or an exact multiple of the information you are pasting.

LisaGraph requires that X-axis labels are entered in column A of the table and variables to be plotted on the graph are entered in columns B through I. When you paste cells from another application, you may find that the information is arranged as rows instead of columns. If this happens, you can transpose the rows into columns in the LisaGraph table. See Transposing Rows and Columns under Moving and Copying Information.

To LisaGraph from LisaCalc

LisaCalc's spreadsheet is the same size as LisaGraph's table. You can either transfer information directly from the spreadsheet and then move it around in the LisaGraph table, or you can select information in the spreadsheet and transpose it into the table (see Transposing Rows and Columns under Moving and Copying Information).

Pasting information from LisaCalc into LisaGraph has the following results.

Text and Numbers You must paste text and numbers from the LisaCalc spreadsheet into the appropriate columns in the LisaGraph table.

- **Text** is plotted only if it is pasted into Column A of the LisaGraph table; otherwise it is ignored. Information you paste into Column A of the table becomes X-axis labels on the graph.
- **Numbers** pasted into Columns B through I are plotted on the graph.

Rows or Columns When you copy rows or columns from LisaCalc to LisaGraph, they may not be properly arranged for the LisaGraph table. For example, a LisaCalc row might contain the graph's X-axis labels which should appear in column A of the table. If this happens, you can transpose rows into columns or vice versa. See Transposing Rows and Columns, under Moving and Copying Information.

Alignment and Number Style Cells pasted into LisaGraph retain the LisaCalc cell alignment and number style.

To LisaGraph from LisaList

You can copy a single field, a range of fields, and entire rows or columns from LisaList to a LisaGraph table. Pasting information from a LisaList list into a LisaGraph table has the following results.

Alignment and Number Style Cells retain the LisaList alignment and data format, even if you had previously chosen a different alignment or number style for these cells in the table. If necessary, you can change the alignment or number style after the cells have been pasted.

Column Width The complete entry from a LisaList field is pasted into a LisaGraph cell, even if it was not completely visible in the field when you copied it. If an entry is too wide to be fully displayed in a cell in the table, LisaGraph fills the cell with asterisks. You can then widen the column to display the complete entry.

Text and Numbers You must paste text and numbers from a list into the appropriate columns in the LisaGraph table.

- *Text* is plotted only if it is pasted into Column A of the LisaGraph table; otherwise it is ignored. Information you paste into Column A of the table becomes X-axis labels on the graph.
- *Numbers* pasted into Columns B through I are plotted on the graph. LisaGraph plots the LisaList data types on the graph as follows:

  Number and *Money* are plotted on the graph; *Zip Code* is plotted on the graph as if it were a regular number. *Date, Time, Telephone,* and *Social Security* are not plotted on the graph.

To LisaGraph from LisaWrite

If you have created a table in a LisaWrite document, you can copy any part of this table into a LisaGraph table. You can also create annotations on a graph by pasting text from a LisaWrite document into the graph portion of a LisaGraph document.

Pasting tabular information from a LisaWrite document into a LisaGraph table has the following results.

Paragraphs LisaGraph treats each paragraph in a LisaWrite document as a row in the table.

Tabstops LisaGraph treats each tabstop in a LisaWrite document as the beginning of a new column in a table.

For example, LisaGraph regards a single LisaWrite paragraph containing three tabstops as one row containing three columns. If you copy more than one paragraph, the paragraph with the highest number of tabstops defines the number of columns. For example, if you copy two paragraphs — one with three tabstops and one with six — LisaGraph treats this as two rows, each containing six columns.

To LisaGraph from LisaTerminal

You can copy tabular information from LisaTerminal to a LisaGraph table. Whatever is transmitted from the host computer to the LisaTerminal document can be copied, selected, and pasted into a LisaGraph Table. LisaGraph treats LisaTerminal paragraphs and tabstops in the same way it does those in a LisaWrite document (see above).

To LisaGraph from LisaDraw

You can only move text from LisaDraw to LisaGraph. The text can be used as an enhanced annotation on the graph or pasted into a cell in the table.

To LisaGraph from LisaProject

The LisaProject Cash Flow Table or Task Table can be copied from a LisaProject document and pasted into the LisaGraph Table.

To Copy Information from Other Applications to LisaGraph:

1 ▸ Select the part of the LisaCalc, LisaDraw, LisaList, LisaWrite, LisaProject, or LisaTerminal document that you want to copy.

2 ▸ Open the **Edit** menu and choose **Copy**.

The selected information is placed on the Clipboard.

3 ▸ Open the LisaGraph document into which you want to copy the information by double-clicking on its icon (you may need to rearrange objects on the desktop first).

4 ▸ Select a location in the table for the copied information. (If you need help, see Moving and Copying Information.)

5 ▸ Open the **Edit** menu and choose **Paste**.

The information from the Clipboard is copied into the table.

If LisaGraph finds an error when pasting the information, an alert message is displayed. You can then cancel the remainder of the operation or continue to paste.

Copying Information from LisaGraph

You can copy any part of a LisaGraph table into a LisaCalc, LisaList, LisaWrite, or LisaTerminal document. You can copy:

- A single cell, row, or column.
- A range of cells, rows, or columns.
- The entire table.

In addition, you can copy any or all of the graph portion of a LisaGraph document into a LisaDraw or a LisaWrite document.

When you paste into a LisaList or LisaCalc document, the area you paste into must be the same size or an exact multiple of the information you are pasting. For complete information on the LisaList and LisaCalc pasting rules, see the *LisaList* or *LisaCalc* manual.

From LisaGraph to LisaCalc

You can copy any part of a LisaGraph table into a LisaCalc spreadsheet to perform calculations on the values:

- A single cell, row, or column.
- A range of cells, rows, or columns.
- An entire LisaGraph table.

You cannot copy the graph portion of a LisaGraph document into LisaCalc.

Pasting cells from a LisaGraph table has the following results.

Column Width If the LisaGraph column was not wide enough to display the complete entry in a cell, only the part of the entry that was visible on the table is pasted into the spreadsheet.

From LisaGraph to LisaDraw

You can copy a graph into a LisaDraw document to enhance the graph. Once you enhance a graph with LisaDraw, the graph becomes a LisaDraw document rather than a LisaGraph document. You cannot move the enhanced graph back into LisaGraph. Rules that apply to LisaDraw documents now apply to the enhanced graph. When you paste the graph into a LisaDraw document, the center of the graph is placed on the selected spot.

You cannot move a table into LisaDraw.

From LisaGraph to LisaList

You can copy any part of a LisaGraph table into a LisaList list:

- A single cell, row or column.
- A range of cells, rows or columns.
- An entire LisaGraph table.

You cannot copy the graph portion of a LisaGraph document into LisaList. Pasting information from the LisaGraph table into LisaList has the following results.

Number of Columns You must be sure there is enough space to accommodate all the columns you are pasting into LisaList. LisaList can add more rows to accommodate the new information, but not additional columns.

Column Width If the LisaGraph column was not wide enough to display the complete entry in a cell, only the part of the entry that was visible on the table is pasted into the list.

Alignment and Number Style LisaGraph cell alignment and number style are not preserved.

If LisaList finds an error while pasting the information, an alert message is displayed. You can then cancel the remainder of the operation or continue. If you continue, the information that caused the error will not appear in the list, and these fields in the list will be blank.

From LisaGraph to LisaWrite

Copying information from a LisaGraph table to a LisaWrite document has the following results.

Paragraphs LisaWrite treats each row in the table as a separate paragraph followed by a Return character.

Tabstops LisaWrite inserts tabstops in front of each column from the column, including the first column. Numbers are given flush right tabstops and text values are given flush left tabstops. After pasting the information, you can adjust the tabstops as necessary.

From LisaGraph to LisaTerminal

When you copy information from LisaCalc to LisaTerminal, LisaTerminal sends the information to the host computer just as if it had been typed directly into the LisaTerminal document. For more information on LisaTerminal, see the *LisaTerminal* manual.

To Copy Information into Other Lisa Applications:

1 ▸ Select the part of the table or graph you want to copy (or all of it, if you want).

To select the entire graph for copying, you must use **Select All of Graph** from the **File/Print** menu.

2 ▸ Open the **Edit** menu and choose **Copy**.

The selected information is placed on the Clipboard.

3 ▸ Open the document into which you want to copy the information by double-clicking on its icon (you may need to rearrange objects on the desktop first).

4 ▸ Select a location in the document for the copied information by clicking on it.

5 ▸ Open the **Edit** menu and choose **Paste**.

The information from the Clipboard is copied into the document.

Shortcuts and Alternatives

The information on the following pages describes shortcuts and alternatives methods for performing LisaGraph operations. These alternatives have the same result as the methods described throughout the earlier part of this chapter. When you are familiar with using LisaGraph, you can choose whichever method is most convenient for you.

Double-clicking on Icons

When you want to open a graph, you can double-click on icons instead of selecting the icon and choosing menu items. You can do this to start a new graph or to open an existing graph.

To Open a New Graph:

1 ▶ Open the disk by double-clicking on its icon.

2 ▶ Tear off a piece of LisaGraph stationery by double-clicking on the LisaGraph paper icon.

3 ▶ Type a name for the new graph (the name can be any length).

4 ▶ Double-click on the new graph's icon to open the graph.

To Open an Existing Graph:

1 ▶ Open the disk or diskette by double-clicking on the icon.

2 ▶ If the graph is in a folder, double-click on the folder's icon.

3 ▶ Double-click on the graph's icon to open the graph.

Entering Information and Editing Entries

When a cell is selected, its entry appears in the Value area of the Status panel, as well as in the cell itself.

Values can be entered or edited either directly in the table or in the Status panel with identical results. However, entering or editing information directly in the table is usually faster.

Entering Information in the Status Panel

You can enter information in the Status panel or directly in the table, with the same results. Entering information directly in the table is usually faster; however, you can use the Status panel to quickly locate a particular cell and enter information.

To Enter Information in the Status Panel:

1▸ Click once in the Cells area of the Status panel.

2▸ Type the coordinates of the cell where you want to enter information (for example, B6).

3▸ Select the **Value** area of the Status panel by pressing Tab. The cell is now selected on the table and a blinking vertical line (the insertion point) appears in the Value area.

4▸ Type the entry (either text or numbers for Column A, numbers only for Columns B through I). The entry you type is displayed in the cell as well as in the Value area.

5▸ Press Enter. LisaGraph enters the new value in the table and automatically replots the graph.

Editing Entries In the Status Panel

All basic editing that can be done in a cell can also be done in the Value area of the Status panel.

To Change an Entry:

1▸ Select the cell that contains the entry.

2▸ Move the pointer to the Value area and select the entry or part of the entry you want to change.

3▸ Type the new entry and press Enter. LisaGraph automatically replots the graph.

To Insert Text in an Entry:

1▸ Select the cell that contains the entry.

2▸ Move the pointer to the Value area and click once at the point you want to insert text.

3▸ Type the text you want to insert and press Enter. LisaGraph automatically replots the graph.

Apple Key

Some menu items are accompanied by an Apple symbol and a letter. This means that you can hold down the Apple key while typing the letter to choose a menu item, rather than opening the menu and choosing the item with the mouse.

The table on the next page shows what you can do using the various key combinations.

Using the Apple Key	
To Select the Entire Graph	Hold down the Apple key and type *A*.
To Copy the Current Selection to the Clipboard	Hold down the Apple key and type *C*.
To Paste the Entries from the Clipboard into the Graph	Hold down the Apple key and type *V*.
To Cut the Current Selection from the Graph	Hold down the Apple key and type *X*.
To Terminate an Operation	Hold down the Apple key and type a period (.).
To Center Selected Entries in the Table	Hold down the Apple key and type *K*.
To Align Selected Entries Flush Left in the Table	Hold down the Apple key and type *L*.
To Align Selected Entries Flush Right in the Table	Hold down the Apple key and type *R*.
To Highlight Selected Text in Bold on the Graph	Hold down the Apple key and type *B*.
To Highlight Selected Text in Italics on the Graph	Hold down the Apple key and type *I*.
To Underline Selected Text on the Graph	Hold down the Apple key and type *U*.
To Return Selected Text to Plain Text on the Graph	Hold down the Apple key and type *P*.

Fixing Common Problems

The information on the following pages describes some common LisaGraph problems and solutions. If you experience problems with the Lisa itself, refer to the *Lisa Office System* manual.

Menu Bar

Problem

The menu names shown in the menu bar are not LisaGraph menus.

Solution

Look at the document name at the top of the LisaGraph window. If the document name is shown as plain black letters, you have accidentally deactivated the document.

Click once anywhere in the document window to activate the document. The document name should then be highlighted (white letters on a black background), and the LisaGraph menu names should appear in the menu bar.

Selecting

Problem

You have selected the wrong part of the table or graph or accidentally set the insertion point in text.

Solution

Click once in the deselect box at the top left of the table.

Asterisks Displayed in the Table

Problem

Asterisks appear in a cell after you enter information.

Solution

The entry is too wide for the cell to display. You can either view the complete entry in the Value area of the Status Panel when the cell is selected, or widen the column if necessary (see Adjusting Column Width, under Changing the Appearance of the Table).

Number Style

Problem

You type a number in the table with zeroes to the right of the decimal point, but only the whole number is displayed. For example, you type *2.00* in the table, but only *2* is displayed.

Solution

When the table is displayed, numbers are shown in Floating Decimal number style. To change the number style, see Changing the Appearance of the Table.

Monetary Style

Problem

When you try to open a LisaGraph document, the Lisa displays a message telling you that it had to convert the document. You see the numbers displayed in a different monetary style than you want.

Solution

The document was created with a non-US LisaGraph tool (such as a British or foreign-language micro diskette). The message displayed means that, *after you save and put away the document,* LisaGraph converts it so that monetary values lose the currency symbol, as shown below.

Original Entry	LisaGraph US Conversion
(Money) £ 40,000	40,000
(Money) DM 567	567
(Money) 5.000,00 FR	5.000,00
(Date) 31.12.83	31.12.83

Note: Punctuation and dates are not converted to US format.

The document's original formats for numbers and dates do not change, but you can change them if you wish. LisaGraph remembers the original currency symbol of a value, even though a symbol is not displayed because of the conversion.

Annotations Over Legends

Problem

You change the type of graph. The legends showing patterns moved to a different location on the new graph, but the annotations over the legends did not move with the legend box.

Solution

You must edit the graph to remove the annotations and retype them directly over the Legend box. See Annotating the Graph, under Creating a New Graph.

Changing Type Style on the Graph

Problem

You changed typestyles on the graph and used various styles and sizes, including some for emphasis (bold, italics or others). However, the changes did not appear on the graph.

Solution

You must display the graph in its actual size in order to view the changes in type styles, size or emphasis. When you reduce the graph to fit the screen, the text reverts to the original type size, even if you specified another. However, the graph will still print in the type style and sizes you have chosen.

Changing the X or Y Axis Range

Problem

You specified a new range for the X- or Y-axis using the dialog box. However, after you enter another value in the table, LisaGraph recalculates the range to be greater than the range you specified.

Solution

If you enter a value that exceeds the specified range, LisaGraph automatically adjusts the range again to include the new value. You can either use the new range calculated by LisaGraph, or follow the procedures under Changing the X- or Y-Axis Range to change the range once again.

Data Missing on an Area Chart

Problem

Information in one or more of the columns does not appear on the area chart.

Solution

Rearrange the columns in the table so that the highest values are entered in Column B, the next highest values in Column C, and so forth.

When LisaGraph plots the area chart, Column B (the highest values) is plotted first and is therefore in the background. Column C (the next highest values) is plotted next and overlays the first area, so that the information appears in the foreground.

Information is Not Plotted Correctly

Problem

When you enter information in the table, LisaGraph plots only some of the information. In addition, the X- and Y-axis labels are inconsistent.

Solution

You need to correct the layout of information in the table by transposing rows and columns. This may occur when you transfer information from another application, such as a LisaCalc spreadsheet, or when you enter information in rows instead of columns.

For example, you might have started entering information in the table to graph sales figures for a four-year period by entering the time periods horizontally on the page and the sales figures underneath in the next row. In order to create a graph, you must transpose the time periods to Column A (which then become the X-axis labels) and the sales figures to Column B (which are then plotted for each year).

Refer to Transposing Rows and Columns, under Moving and Copying Information.

Chapter 3

LisaGraph Reference

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Introduction

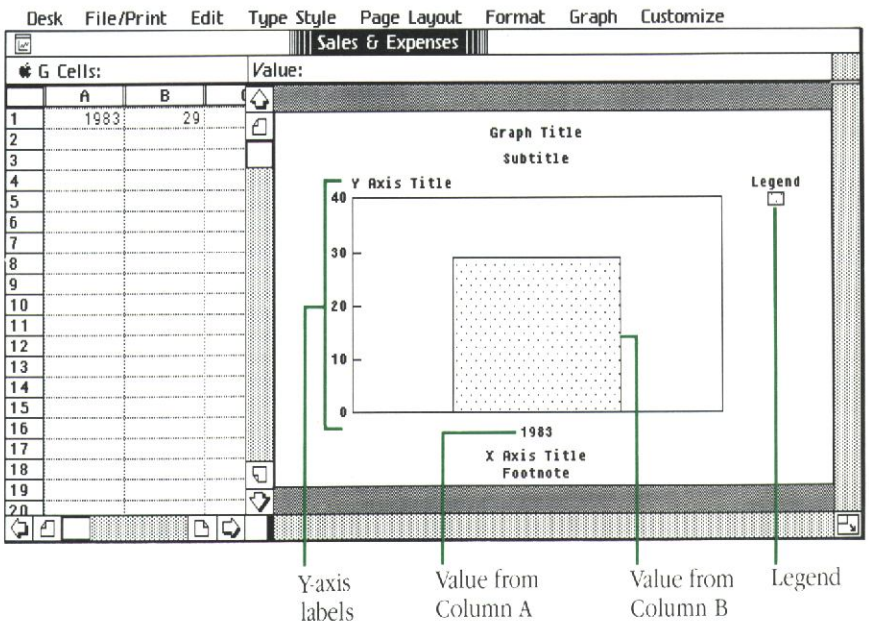
This chapter is an overview and summary of LisaGraph. It tells you about LisaGraph without emphasizing procedural instructions. Refer to Chapter 2 for complete step-by-step instructions on the tasks you can perform with LisaGraph.

How Does LisaGraph Work?

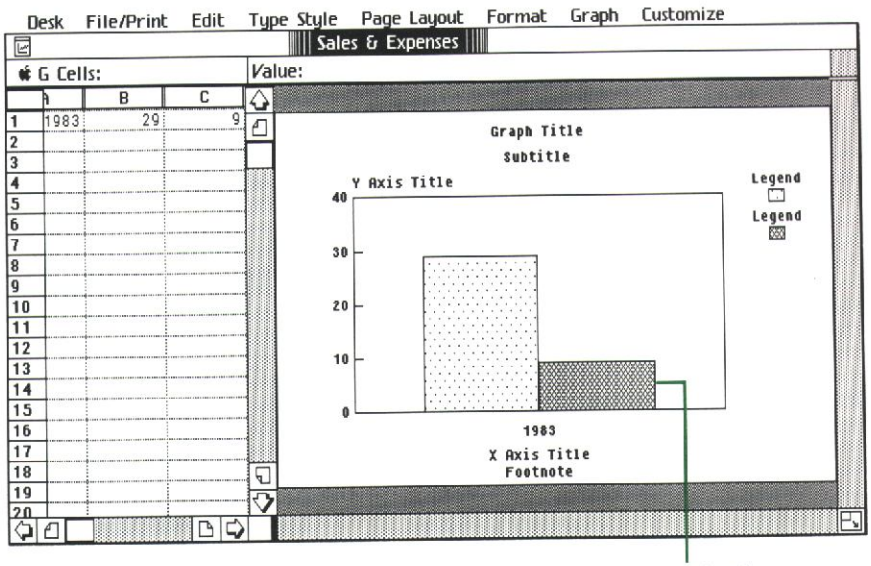
Let's say you want to create a graph showing sales and expenses over a four-year period. Here's how LisaGraph uses the information you enter in the table to create the graph.

You first enter the year in Column A and the sales figure for that year in Column B in the same row.

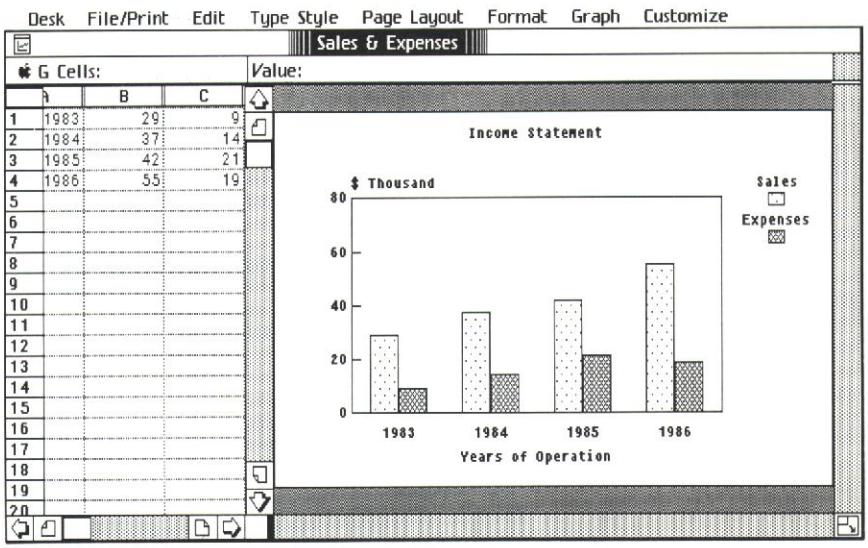
After you enter information in the table, LisaGraph pairs the value you enter in Column A (the year) with the value you enter in Column B (the sales figure), calculates the Y-axis labels, plots the intersection of the information (called a *data point*), and displays the first bar of the graph as shown below. LisaGraph plots a bar graph as the standard graph, although you can change the type of graph later.



You now enter expense figures in the same row in Column C. LisaGraph pairs the X-axis value in column A (the year) with the corresponding value in Column C (the expense figure), and immediately plots the second bar on the graph.



LisaGraph continues pairing values in Column A with the values you enter in the remaining columns in the same row, through Column I. As you enter information in new rows and columns, LisaGraph automatically displays new bar and legend captions, until all information is plotted.

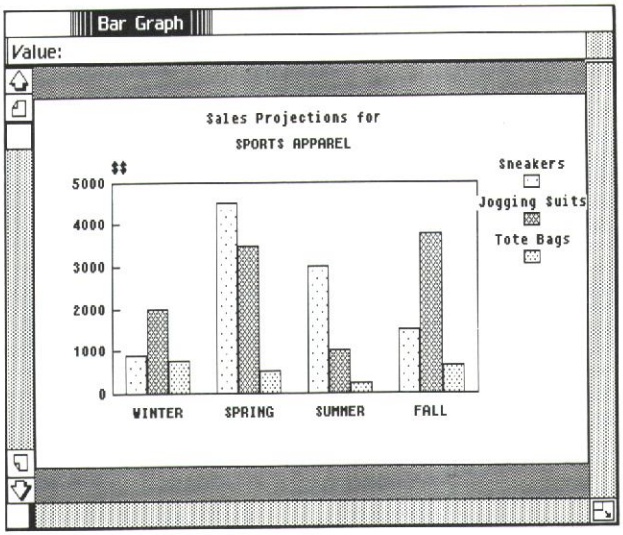


If you copied information from another application, such as a LisaCalc spreadsheet, you may need to transpose the information in the LisaGraph table in order to plot an accurate graph. For more information, refer to using LisaGraph with Other Applications, in Chapter 2.

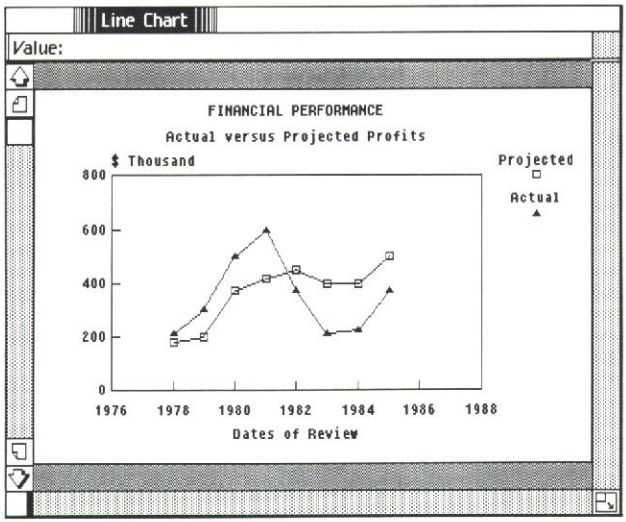
Types of Graphs

Most graphs or charts show how the quantity of an item varies over time, or within a set time period. A description and an example of each of the LisaGraph charts and graphs is provided below.

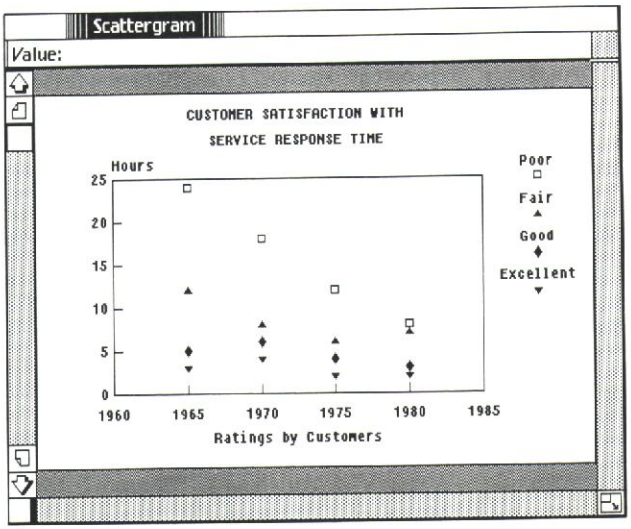
Bar Graphs Bar graphs are best for comparing the size or quantity of two or more items to each other, but not to the total. Bar graphs emphasize levels or magnitude, and are suitable for events that occur within a set period of time (for example, sales of sports apparel over the four seasons). Bar graphs are most effective when plotting only a few periods or when there is extreme variation in the information.



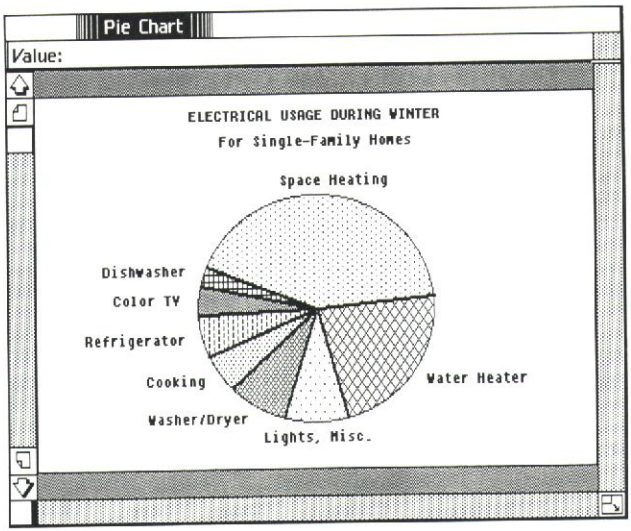
Line Charts Line charts are best for showing trends, since they emphasize movement and angle of change. Line charts can show either a single set or several sets of information that carry over from one time period to the next. Line charts are also useful in showing negative trends and when plotting many points. For example, you may want to show actual versus projected profits as a trend over an eight-year period.



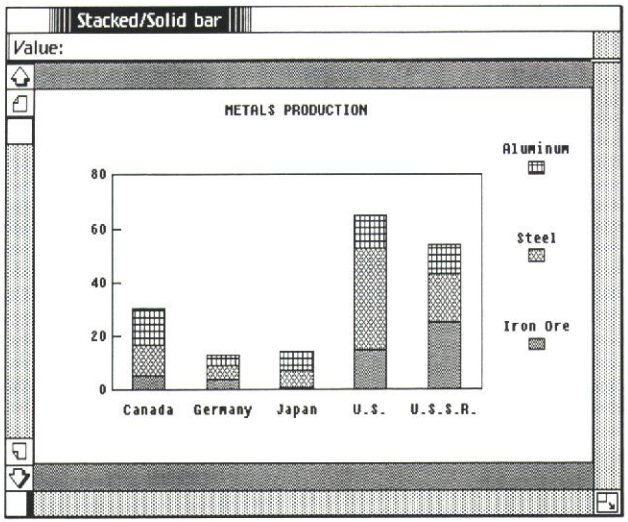
Scattergrams Scattergrams show how one item relates to another and whether or not the relationship follows a meaningful pattern. A scattergram is similar to a line chart, but dots are used instead of lines. For example, you can plot the relationship between customer satisfaction and service response time on a scattergram.



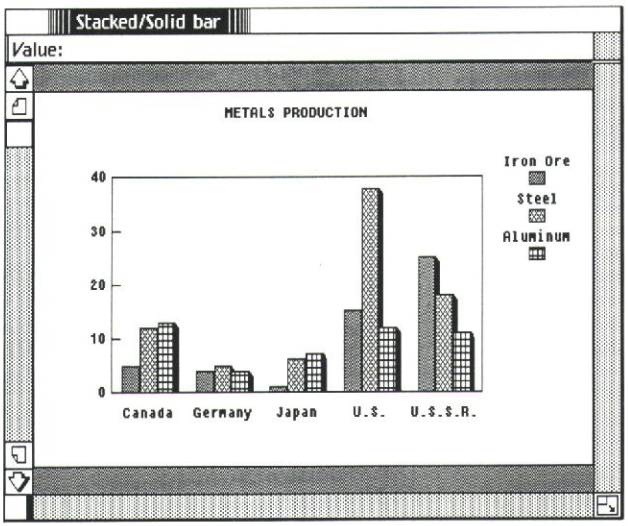
Pie Charts Pie charts are best for comparing the percentage or distribution of components to the whole. For example, a pie chart can be used to show electrical usage in the home.



Stacked Bar Graphs Stacked bar graphs are useful when you want to show how components "stack up" for one time period or for one particular variable (for example, a geographic area, industry, or type of product). Stacked bar graphs are a variation of the regular bar graph, and may present a less cluttered appearance when comparing many variables.

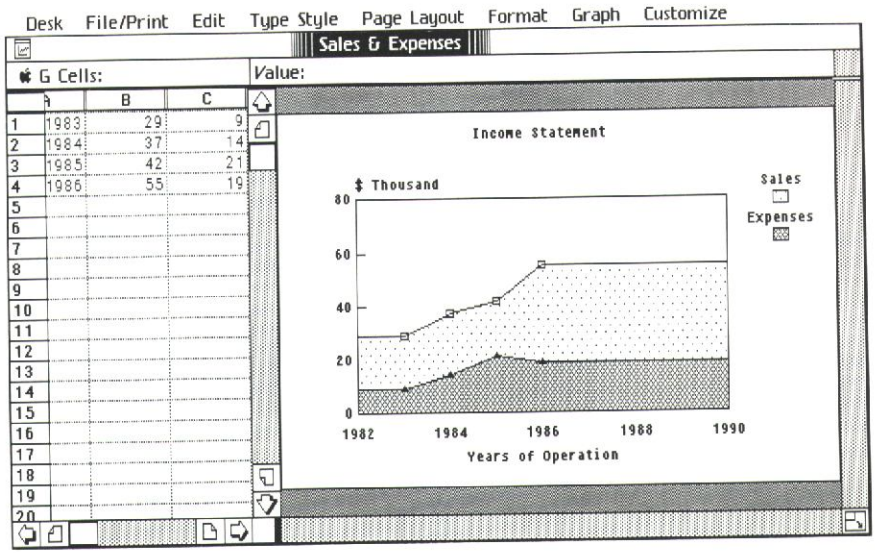


Solid Bar Graphs Solid bar graphs simply add dimension to the regular bar graphs.



Area Charts Area charts are similar to line charts, but display trends or show proportions of information as a shaded area underneath the line. Area charts are useful for emphasizing certain components against a background, or for geographic factors.

Each area represents one column of information, and the shaded areas overlay each other on the chart. Therefore, you should enter high values first in the table so that those shaded areas are in the background and the shaded areas for low values are in the foreground of the area chart.



Things to Remember

There are several things to remember when creating a graph:

- Each value you enter in Column A becomes an X-axis label on the horizontal axis of the graph. These values can be text or numbers, and explain what each of the bars or points on a graph represent.
- In order to be plotted on the graph, values you enter in Columns B through I must be numbers. If you enter text in these columns, LisaGraph ignores the value and does not plot the information for that data point. LisaGraph uses the values you enter in Columns B through I to calculate Y-axis labels for the vertical axis of the graph.

  In addition, these values are used to establish the legend (the pattern used to represent each category of information) on the right side of the graph. You can annotate the legend after you enter information in a new column.

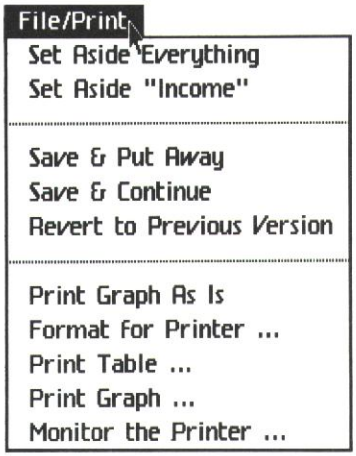
- The values you enter in Columns J through IU are not plotted on the graph, but can be used as a storage place for information. This allows you to transfer information from a LisaCalc spreadsheet, which is the same size as LisaGraph's table, then move information to make the graph appear the way you want.

After you complete the table, you can change the content and the appearance of the table or the graph. You can make changes by editing information or by using LisaGraph menus. The LisaGraph menus and menu items are discussed on the following pages.

LisaGraph Menus

You use LisaGraph by entering information in the table and selecting menu items. These menus list LisaGraph's operations for editing, formatting, printing and customizing the graph. The menu bar at the top of the screen displays the names of the LisaGraph menus, which are described below.

File/Print Menu



Set Aside Everything Returns all windows to their icons without saving the contents.

Set Aside "Your Graph" Returns the active document to its icon without saving the contents.

Save & Put Away Saves the contents of the document, closes the window, and returns the icon to its original location.

Save & Continue Saves the contents of the document and leaves the window open.

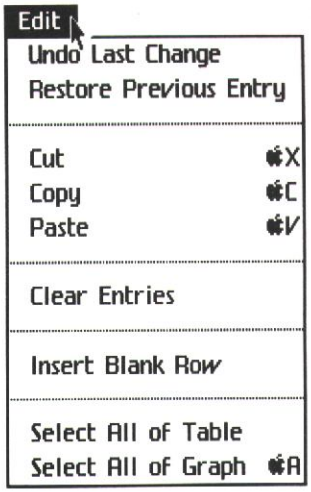
Revert to Previous Version Returns the document to the condition it was in the last time you saved it or put it away.

Print Graph As Is Prints the graph.

Format for Printer . . . Sets formats in the document based on the printer that will be used.

Print Graph . . . Print Table . . . Allows you to specify additional details about printing the table or graph (for example, number of copies, which pages to print).

Monitor the Printer . . . Shows the status of the document(s) printing.



Undo Last Change Restores the selection to its condition before the last operation.

Restore Previous Entry Cancels all changes made to a selected cell, row or column in the table or text on the graph since it was selected.

Cut Cuts the current selection and places it on the Clipboard.

Copy Copies the current selection to the Clipboard.

Paste Pastes whatever is on the Clipboard into the location currently selected.

Clear Entries Clears the current selection from the table or graph.

Insert Blank Inserts a blank column or row when the grid handle between columns or rows is selected.

Select All of Table Selects the entire table.

Select All of Graph Selects the entire graph.

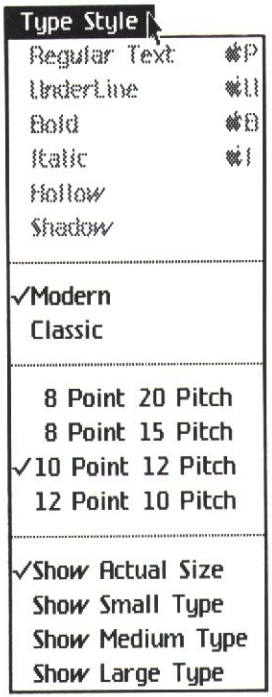
Type Style Menu for the Table

Underline/Bold/Italic/Hollow Shadow Shown in gray (these styles not available for the table).

Modern/Classic Uses the type style you choose here for printing the table.

Point/Pitch Uses the point size and pitch you choose here for printing the table.

Show Actual Size/Small/Medium/Large Type Displays this size of type for the table on the screen.



Type Style Menu for the Graph

Regular Text Shows standard type style.

Underline Emphasizes text with underlining.

Bold Emphasizes text with bold.

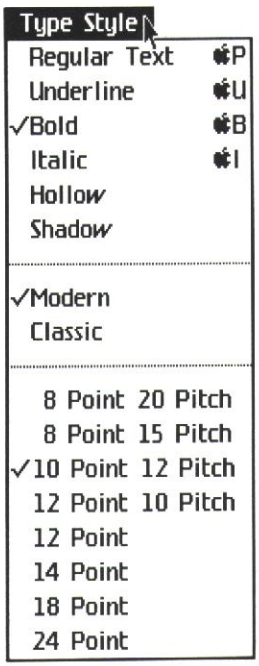
Italic Emphasizes text with italics.

Hollow Emphasizes text by making the characters appear hollow.

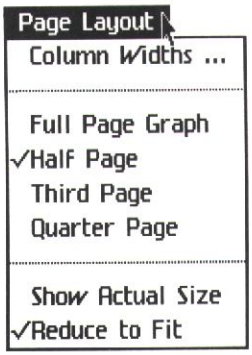
Shadow Emphasizes text by making the characters appear shadowed.

Modern/Classic Displays selected text on the graph in this type style.

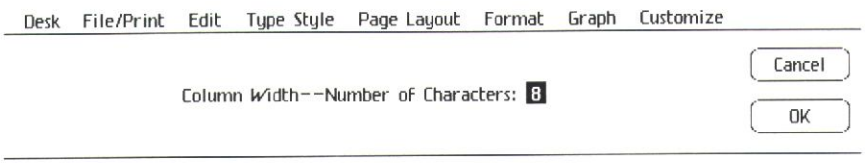
Point/Pitch Uses this point size and pitch to display selected text on the graph.



Column Widths . . . Displays the dialog box where you adjust the width of selected columns.



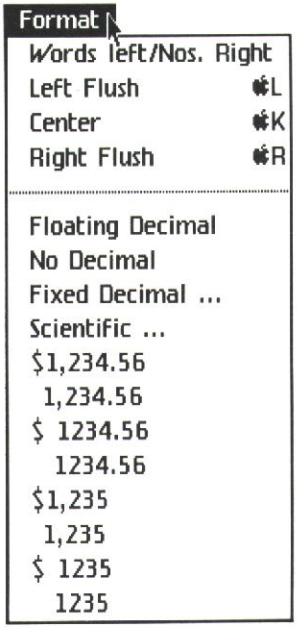
Type the number of characters you want to display in the column and click OK.



Full Page Graph/Half Page/Third Page/Quarter Page Displays and prints the graph in the size you select.

Show Actual Size Displays the graph in the size you select above.

Reduce to Fit Reduces the graph to fit the screen.



Words Left/Nos. Right Aligns the values in selected cells so that words appear on the left and numbers appear on the right (standard alignment).

Left Flush Aligns the values in selected cells to appear at the cell's left boundary.

Center Aligns the value in selected cells to appear centered within the cell.

Right Flush Aligns the values in selected cells to appear at the cell's right boundary.

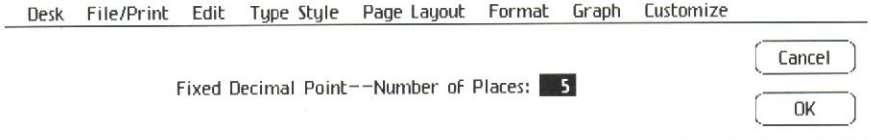
Floating Decimal Displays the number so it fits in the selected cell.

No Decimal Displays the number in the selected cell without a decimal.

Fixed Decimal Displays the number in the selected cell with a fixed number of decimal places.

Scientific Displays the number in the selected cell with a scientific notation.

Note: When you choose either the **Fixed Decminal** number style or the **Scientific** number style, a dialog box appears.



To set the number of decimal places, type the number of decimal places you want to use and click OK.

$ 1,234.56 Dollar sign, commas, cents.

1,234.56 Commas, cents.

$ 1234.56 Dollar sign, cents (no commas).

1234.56 Cents.

$ 1,235 Dollar sign, commas (rounded to the whole dollar).

1,235 Commas only (rounded to the whole dollar).

$ 1235 Dollar sign only (no commas, rounded to the whole dollar).

1235 Numbers only (rounded to the full number).

Graph Menu

Bar/Line/Scatter/Pie/Stacked Bar/Solid Bar/Area Plot the data points in the graph type selected. Refer to Type of Graphs earlier in this chapter for a description and example of each of these graph types.

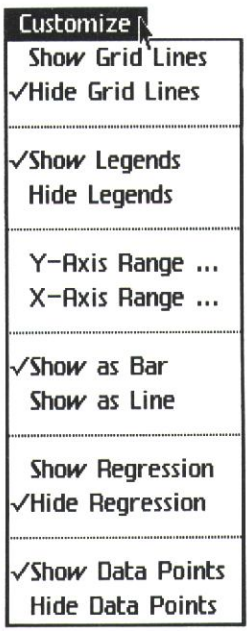
Customize Menu

Show Grid Lines Shows grid lines on a graph.

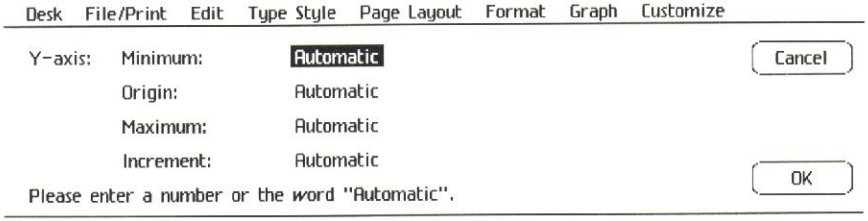
Hide Grid Lines Hides grid lines on a graph.

Show Legends Displays legends on the graph.

Hide Legends Hides legends on the graph.



Y-Axis Range . . ./X-Axis Range . . . Displays the following dialog box where you can specify a new range for the labels along a graph's Y- or X-axis scale.



The dialog box allows you to change one or more of the four characteristics of the X- or Y-axis range:

Minimum Value The lowest number in the range.

Axis Origin The number at which a reference line (a dotted line) appears.

Maximum Value The highest number in the range.

Increment The number amount between successive labels which determines the number of labels across the X- or Y-axis.

The word *Automatic* appears in the dialog box when LisaGraph has automatically calculated that particular characteristic.

Show as Bar (For use with bar graphs only.) Plots data points in the selected column as a bar.

Show as Line (For use with bar graphs only.) Plots data points in the selected column as a line.

Show Regression Draws a regression line to show the best fit across data points for a selected column and display the confidence factor.

Hide Regression Hides the regression line.

Show Data Points Displays data points on a line or area chart.

Hide Data Points Hides data points on a line or area chart.

Apple Key

Some menu items are accompanied by an Apple symbol and a letter. This means that you can hold down the Apple key while typing the letter to choose a menu item, rather than opening the menu and choosing the item with the mouse.

- ⌘ A Selects the entire graph.
- ⌘ X Cuts the current selection from the graph.
- ⌘ C Copies the current selection to the Clipboard.
- ⌘ V Pastes the entries from the Clipboard into the graph.
- ⌘ . Terminates an operation.
- ⌘ K Centers an entry in the table.
- ⌘ L Aligns an entry flush left in the table.
- ⌘ R Aligns an entry flush right in the table.
- ⌘ B Emphasizes selected text in bold on the graph.
- ⌘ I Emphasizes selected text in italics on the graph.
- ⌘ U Underlines selected text on the graph.
- ⌘ P Returns selected text to plain text on the graph.

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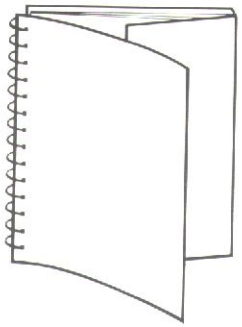

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LisaGraph

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